

HARNESSING DIGITAL TECHNOLOGY TO FOSTER INCLUSIVE WOMEN ENTREPRENEURSHIP IN POST-CONFLICT NORTHERN PROVINCE, SRI LANKA: OPPORTUNITIES, BARRIERS, AND IMPACT

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Abstract

This qualitative inquiry explores the function of digital technologies in promoting inclusive entrepreneurial ventures among women in the post-conflict Northern Province of Sri Lanka. Acknowledging the region's distinct socio-economic challenges and cultural context, the research adopts a case study methodology to investigate how female entrepreneurs leverage digital resources to surmount obstacles, gain access to opportunities, and bolster their economic and social agency. The study concentrates on micro, small, and medium-sized enterprises across diverse sectors, including agriculture, retail, textiles, and services. Employing a combination of purposive and snowball sampling techniques, 15–20 women entrepreneurs from various districts within the province were recruited, alongside key informants such as government officials, representatives from women's organizations, and experts in digital inclusion. Data were gathered through semi-structured, in-depth interviews conducted in Tamil or Sinhala, yielding comprehensive insights into participants' experiences regarding the adoption of digital technology. The results indicate that digital technologies offer notable advantages, such as enhanced market reach, improved business visibility, and greater operational effectiveness. Interviewees also reported gains in financial autonomy and increased involvement in household and community decision-making processes. Nevertheless, the research also exposed ongoing challenges, including low levels of digital literacy, elevated internet expenses, inadequate infrastructure, and socio-cultural impediments to women's public and entrepreneurial activities. The perceived lack of cohesive and contextually relevant

institutional assistance was also noted. The study posits that although digital technologies present significant opportunities for female entrepreneurs in the Northern Province of Sri Lanka, their successful integration necessitates interventions tailored to the local context. These encompass community-based digital literacy initiatives in local languages, affordable infrastructure, culturally appropriate engagement approaches, and strong collaborations between the public and private sectors. The research highlights the importance of policymakers and development organizations in creating inclusive support mechanisms that address the convergence of gender, post-conflict recovery, and technology. Recognizing the constraints associated with its geographic focus and qualitative nature, the study advocates for more extensive and longitudinal research to assess the sustained effects of digital entrepreneurship on women's empowerment.

Keywords: Women Entrepreneurship, Digital Technology, Post-Conflict Development, Northern Province, Sri Lanka, Socio-Cultural Barriers, Digital Inclusion.

Introduction

The integration of digital technology presents a transformative pathway to fostering inclusive women's entrepreneurship, particularly in regions recovering from conflict, such as the Northern Province of Sri Lanka (Wijewardena and Rammal, 2025). Entrepreneurship by women is essential for driving inclusive economic development and alleviating poverty, especially in regions recovering from conflict and marginalized areas. Digital technologies have the potential to bridge geographical divides, connect women entrepreneurs to broader markets, provide access to crucial information and resources, and facilitate the development of essential business competencies (Mashapure *et al.*, 2023). Furthermore, empowering women through entrepreneurial endeavors can significantly contribute to the economic revitalization of post-conflict communities by promoting stability and resilience (Porter, 2013a). This empowerment process requires women to proactively initiate social activities aimed at improving their circumstances (Tahir and Raharja, 2021). In post-conflict areas like Northern Province, Sri Lanka, where traditional business infrastructure and support systems may be inadequate or difficult to access, digital platforms can provide women with alternative pathways to establish and grow their enterprises (Handaragama and Kusakabe, 2021).

In Northern Province, Sri Lanka - a region that has only recently emerged from years of civil conflict - empowering women through entrepreneurship is seen as a path to rebuilding communities, enhancing livelihoods, and promoting social stability (Sarvananthan, 2015). However, women in this region face various obstacles due to the impact of the conflict, entrenched gender norms, limited economic resources, and poor market access (Sultana and Dey, 2021).

The widespread adoption of digital technologies, including mobile phones, social media platforms, digital payment systems, and online marketplaces, presents a significant opportunity to address the gaps faced by women entrepreneurs in regions like Northern Sri Lanka. Research has shown that digital tools can empower women by enhancing their access to information, networks, capital, and customer bases (Handaragama and Kusakabe, 2021). However, the extent to which women entrepreneurs in Northern Sri Lanka have leveraged these digital solutions and the resulting impact remain underexplored.

Although digital technology has immense potential, various barriers can impede effective utilization by women entrepreneurs in post-conflict regions (Omokhoa et al., 2024). According to the literature, the primary constraints for the adoption of digital technology by women entrepreneurs in developing regions are limited digital literacy and lack of (Omokhoa et al., 2024)technical expertise. This is particularly the case for women-owned SMEs, where business owners often lack the requisite knowledge to select and implement appropriate digital technologies. Furthermore, the costs of technology adoption, including hardware, software, and internet access, can also pose a barrier for women entrepreneurs with limited financial resources .

The digital gender divide further intensifies these obstacles, as women in post-conflict regions frequently have more restricted access to digital infrastructure and connectivity relative to men, constraining their capacity to fully harness digital tools(Borgonovi *et al.*, 2021). Furthermore, apprehensions about data privacy, cybersecurity, and online fraud can dissuade women entrepreneurs from adopting digital platforms, especially in environments where trust in digital systems is low.. Technological advancements have given rise to innovative financial solutions that cater to the unique challenges faced by small and medium enterprises (Hope Ehiaghe Omokhoa *et al.*, 2024). Collaborative efforts between the public and private sectors can fund initiatives aimed at enhancing the digital competencies of these enterprises, while technology providers can offer tiered pricing models to address the cost concerns associated with technology adoption(Hope Ehiaghe Omokhoa *et al.*, 2024). Implementing targeted interventions to address these barriers is essential to empower women entrepreneurs in Northern Sri Lanka and enable them to fully leverage digital technologies to grow their businesses, improve their livelihoods, and contribute to the region's economic revitalization.

Digital technology presents a transformative avenue for fostering inclusive women's entrepreneurship in post-conflict regions like Northern Sri Lanka, as it can address various critical obstacles that these women entrepreneurs encounter(Mariscal *et al.*, 2020). For instance, e-commerce platforms enable small and medium enterprises to access global markets, empowering even the smallest businesses to compete internationally by reaching customers they would otherwise be unable to access(Yusuf *et al.*, 2024). This expansion of market reach can result in increased sales and revenue streams, thereby enhancing the long-term sustainability and growth of women-owned enterprises.

Cloud computing empowers small and medium enterprises to efficiently scale their operations without significant upfront investments in information technology infrastructure, granting them the flexibility to respond swiftly to market changes and expand their service offerings (Li *et al.*, 2023). Similarly, social media platforms provide cost-effective marketing and advertising channels, enabling women entrepreneurs to cultivate brand recognition, engage with customers, and promote their products or services to a broader audience(Wang *et al.*, 2023).

Digital financial solutions, such as mobile payment platforms and microfinance applications, have the potential to streamline transactions and improve access to crucial financial services for women entrepreneurs in post-conflict regions(Hope

Ehiaghe Omokhoa *et al.*, 2024). These digital tools can reduce the costs and risks associated with traditional cash-based systems, while enhancing the efficiency and transparency of financial operations. Furthermore, they provide a crucial gateway to credit, savings, and insurance for women entrepreneurs who may be excluded from conventional banking channels, thereby empowering them to grow their businesses and enhance their economic resilience.

Digital tools can significantly improve the operational efficiency and productivity of women-owned enterprises. (Abebe & Kegne, 2023) Adapting technological solutions to the unique cultural and economic contexts of a region is crucial for cultivating inclusive and sustainable entrepreneurial ecosystems for women (Tanti *et al.*, 2022). For example, cloud-based solutions enable scalable and flexible operations, while big data analytics provide deeper insights into market trends, and the Internet of Things monitors and optimizes production processes in real-time (Yusuf *et al.*, 2024). Existing literature lacks a comprehensive examination of how the interplay between technology access, cultural norms, and institutional support systems impacts women-led enterprises in this region (Kumar and Singh, 2021). This study aims to address this knowledge gap by investigating not only the barriers but also the potential of digital innovation to foster inclusive, scalable, and sustainable women entrepreneurship in Northern Sri Lanka.

Although digital technology offers immense potential to transform entrepreneurship, women in the Northern Province of Sri Lanka remain underrepresented in technology-driven business ventures. The region continues to grapple with persistent obstacles, such as limited digital literacy, inadequate infrastructure, insufficient training, and sociocultural impediments that constrain women's participation in the digital economy. While national and regional initiatives have been implemented to support women entrepreneurs, there is a paucity of evidence regarding their effectiveness and the degree to which these efforts have integrated technological solutions. (Kumar and Singh, 2021). In-depth investigation is needed to determine how to more effectively leverage digital technology to support inclusive women's entrepreneurship in this unique socio-economic and post-conflict context (Orser *et al.*, 2021).

Research Objectives

- To assess the current level of digital literacy and access to technology among women in the Northern Province
- To explore how digital platforms (e.g., social media, e-commerce, mobile banking) are enabling or limiting women-led startups
- To identify socio-cultural, economic, and infrastructural barriers unique to the region

Literature Review

Women's entrepreneurial activities are crucial for post-conflict recovery, as they contribute to household earnings, community restoration, and long-term economic resilience (Mashapure *et al.*, 2023). In regions like Northern Province, Sri Lanka,

prolonged civil strife has disproportionately impacted women through displacement, loss of family income, and restricted mobility (Sarvananthan, 2015). Due to the prolonged conflict, many women have been forced to become the primary breadwinners for their families. In this context, entrepreneurship offers a pathway to economic independence and women's empowerment (AYADURAI and SOHAIL, 2006).

In such a context, entrepreneurship emerges not only as a livelihood strategy but also as a tool for empowerment and social integration (Sarvananthan, 2015). However, access to markets, networks, and capital remains highly constrained due to damaged infrastructure and persistent socio-cultural barriers (Abubakar and Suleiman, 2015). Digital technology offers innovative solutions to bypass these limitations. By using digital platforms, women entrepreneurs can access broader markets, participate in training programs, and obtain financial services, thereby fostering inclusion and resilience (Crittenden *et al.*, 2019).

The utilization of digital tools to empower women entrepreneurs in post-conflict contexts requires a nuanced understanding of gender roles, cultural norms, and local institutions. Digital technology has the potential to bridge critical gaps by granting women entrepreneurs access to previously inaccessible information, resources, and markets. E-commerce platforms empower these women to expand their product sales beyond local boundaries, while online financial services can enhance their access to credit and investment opportunities (Yusuf *et al.*, 2024). Additionally, educational programs focused on digital skills can help address knowledge gaps, empowering women to fully leverage digital tools for their entrepreneurial pursuits. Research shows that both educated and uneducated women can realize their dreams to transition from traditional roles to the working environment, thus improving the well-being of their communities and families (Mashapure *et al.*, 2023).

Digital platforms can also help women build support networks and access mentorship, overcoming social isolation and gaining valuable guidance (Tahir and Raharja, 2021). The COVID-19 pandemic has highlighted the critical importance of digital literacy and technology adoption for the survival and growth of small businesses (Rosimah *et al.*, 2022). Empirical evidence from Nepal suggests that during the COVID-19 pandemic, women entrepreneurs in the country have progressively leveraged digital marketing, sought out new business prospects, and adopted adaptive marketing tactics to maintain the viability of their enterprises (Shamim and Islam, 2022). The incorporation of digital technologies can enhance the operational efficiency and competitiveness of women-led enterprises in digital marketplaces. For instance, these technologies enable the streamlining of processes and automation of tasks, thereby improving overall business performance (Hope Ehiaghe Omokhoa *et al.*, 2024).

Despite the potential upsides, substantial obstacles continue to hinder women's access to and productive utilization of digital technology in post-conflict environments (Chochia and Sicut, 2023). Despite the potential benefits, numerous challenges constrain women's capacity to fully leverage digital opportunities. The

digital divide, manifested in disparate access to technology and inadequate digital literacy, remains a significant obstacle, particularly in conflict-affected regions where infrastructure is limited (Tahir and Raharja, 2021). Sociocultural norms can restrict women's access to education, training, and mobility, thereby hindering their participation in digital technology. Therefore, interventions to promote women's entrepreneurship in post-conflict regions must address the digital divide as well as the sociocultural barriers that constrain women's engagement (Antonio and Tuffley, 2014)

Empirical research underscores the significance of examining the distinct forms of empowerment enabled by information and communication technologies (Ameen *et al.*, 2022). These encompass economic empowerment through augmented income and asset holdings, social empowerment via strengthened social networks and community engagement, as well as psychological empowerment through heightened self-esteem and personal agency (Singh, 2021). Furthermore, digital inclusion strategies must consider the intersectional nature of gender with other marginalised identities, such as ethnicity, caste, and disability, to guarantee equitable access and benefits from digital technologies for all women.

Comprehensive research on how digital technology can foster inclusive women entrepreneurship in post-conflict contexts requires a careful examination of the opportunities and challenges (Hasan *et al.*, 2025). Previous research shows that women often lag behind men in terms of access and use of information and communication technologies. There are various opportunities to leverage digital technology to support women's entrepreneurship (Chochia and Sicat, 2023). Fintech innovations can offer affordable, accessible, and efficient financial services to women-owned small and medium enterprises, bridging critical gaps in traditional banking systems. For example, mobile payment platforms have emerged as a prominent driver of financial inclusion, enabling users to transact, pay bills, and purchase goods and services with ease (Hope Ehiaghe Omokhoa *et al.*, 2024)

Digital technologies, such as mobile platforms, social media, e-commerce, and digital financial services, have emerged as potent catalysts for inclusive entrepreneurship, particularly among marginalized groups, including women (AHAMATH NISHA, 2018). Extant research indicates that these digital tools can mitigate information asymmetries, reduce transaction costs, and enhance market access for small-scale women entrepreneurs (Oluwatosin Abdul-Azeez *et al.*, 2024). In the South Asian context, mobile money services and online marketplaces have enabled women to surmount traditional barriers, including mobility constraints and gender-based discrimination (Handaragama and Kusakabe, 2021).

However, the mere availability of technology does not inherently result in positive outcomes, underscoring the necessity for customized support mechanisms. Barriers hampering the adoption of digital technology among women entrepreneurs in developing and post-conflict regions include disparities in digital literacy and limited affordability or accessibility of technological solutions (Hope Ehiaghe Omokhoa *et al.*, 2024). Inadequate digital education and exposure diminish the confidence and capabilities of these entrepreneurs in leveraging digital

tools effectively. Furthermore, the high costs associated with devices, internet connectivity, and related infrastructure, especially in rural or underserved communities, continue to hinder their access to and utilization of digital technologies.

Gendered social norms and domestic responsibilities often restrict women's access to digital tools and control over resources (Hope Ehiaghe Omokhoa *et al.*, 2024). Additionally, concerns over cybersecurity and privacy, such as the fear of online harassment or fraud, can further discourage women's digital participation (Tripathi and Singh, 2018). While Sri Lanka has made notable progress in digital inclusion, disparities across regions and gender lines persist. Urban women increasingly participate in online business, but women in post-conflict regions face infrastructural, linguistic, and institutional challenges. Recent government and NGO-led initiatives aim to bridge the digital divide, but evidence on their localised impact, particularly in the Northern Province, is limited (Hope Ehiaghe Omokhoa *et al.*, 2024)

To examine women's entrepreneurship in post-conflict environments, theoretical constructs like Naila Kabeer's empowerment model and Van Dijk's access model offer essential perspectives. Kabeer (1999) Empowerment, as conceptualized by Kabeer, is a multifaceted process encompassing resources, agency, and achievements. Resources involve material, human, and social capital; agency denotes the capacity to define and pursue goals; and achievements represent outcomes related to well-being and broader societal change. This tripartite framework is frequently employed in analyzing women's economic participation, providing a structured approach to identifying both limitations and facilitators in unstable environments (Cornwall & Edwards, 2010).

Van Dijk's (2006) Van Dijk's access model further elucidates Kabeer's framework by dissecting the multifaceted obstacles individuals encounter in leveraging available resources. This model delineates various forms of access including motivational, material, skills-based, usage-related, and institutional that collectively dictate an individual's capacity for engagement in economic and social spheres. This framework is particularly pertinent in post-conflict environments, characterized by disrupted infrastructure, institutions, and social networks, as it allows for a comprehensive analysis of the interplay between structural impediments and personal capabilities (World Bank, 2012).

Drawing comparative insights from other regions, these frameworks illuminate both context-specific and systemic patterns. For instance, in Rwanda and Liberia, women's cooperatives and legal reforms concerning property rights improved institutional access, which subsequently facilitated the accumulation of resources and collective agency (Berry, 2009; Tripp, 2012). Nevertheless, ongoing impediments such as mobility constraints, insufficient infrastructure, and unofficial taxation at checkpoints persistently hindered women's access to and utilization of markets, thereby diminishing the efficacy of their agency in achieving sustained outcomes (Cooper, 2015). In contrast, in post-conflict South Asian contexts such as Sri Lanka and Nepal, microfinance initiatives enhanced women's

material access, yet deeply rooted gender norms, gaps in documentation, and restrictions on mobility constrained the effective exercise of their agency (Fernando & Moene, 2001; Samarasinghe, 2012). These comparative case studies indicate that while African contexts frequently encounter challenges related to infrastructure and market connectivity, South Asian contexts are predominantly shaped by normative and institutional impediments.

Collectively, these theoretical perspectives underscore that the success of women's entrepreneurship in post-conflict environments is not merely a function of resource availability, but rather an intricate product of the interaction among agency, access, and achievements. The concurrent application of both models facilitates a more comprehensive understanding of the challenges and opportunities encountered by women entrepreneurs, while cross-regional analyses enable the differentiation of localized contingencies from more pervasive structural dynamics. This intricate comprehension is vital for formulating precise interventions aimed at alleviating specific impediments, such as augmenting legal literacy regarding property rights or allocating resources toward digital infrastructure to mitigate mobility restrictions, thereby cultivating authentic empowerment (Cornwall, 2014) (Sultana & Dey, 2021). Furthermore, the integration of digital technologies offers a distinct prospect to overcome conventional obstacles, thereby creating novel pathways for resource acquisition, skill enhancement, and market participation, particularly in areas characterized by emerging institutional structures (Tahir & Raharja, 2021) (Moritz et al., 2023).

Digital entrepreneurship has the potential to substantially amplify women's agency by enabling them to generate income, exercise greater decision-making authority, and attain heightened social visibility (Tripathi and Singh, 2018). In post-conflict contexts, such empowerment is intricately linked to peacebuilding and reconciliation efforts, as women emerge as active economic agents transforming communities ravaged by conflict (Porter, 2013b). Nonetheless, realizing inclusive digital development necessitates not merely facilitating access, but also fostering meaningful participation, providing sustained support, and safeguarding against digital harms (Simon, 2019).

While the literature affirms the transformative potential of digital technology in fostering inclusive women entrepreneurship, specific insights into post-conflict settings like Northern Province, Sri Lanka, are scarce. The intersection of gender, digital access, and post-conflict recovery remains underexplored, particularly in terms of: Localized barriers and cultural factors affecting digital adoption, Effectiveness of ongoing policy and development interventions, Long-term socio-economic and psychological impacts of digital entrepreneurship on women survivors of conflict. This study aims to bridge that gap by providing empirical evidence on the opportunities, barriers, and impacts of leveraging digital technology to promote inclusive women entrepreneurship in this unique and under-researched context.

Methodology

This qualitative research explores digital technologies' role in fostering inclusive women entrepreneurship in Sri Lanka's Northern Province. A case study design was employed to examine the impact of digital technologies on women entrepreneurs' activities, barriers, and opportunities in this unique context. The study focused on women entrepreneurs in Sri Lanka's Northern Province who used or attempted to use digital technologies for their businesses, including those in agriculture, retail, textiles, and services, with a focus on micro, small, and medium-sized enterprises. Purposive and snowball sampling techniques were used to identify and recruit participants who fit the study criteria and could provide rich insights into the phenomenon. (Ayadurai & Sohail, 2006).

To ensure the selection of appropriate participants, a purposive sampling strategy was utilized, targeting individuals with direct or indirect involvement in technology-driven entrepreneurial activities, experience with digital tools, and representation across a range of business types. To ensure diverse perspectives, the research included 15-20 women entrepreneurs from various districts in the Northern Province, representing different business profiles and levels of digital technology integration.

Key informants, including local government officials, representatives from women's entrepreneurship support organizations, and digital inclusion specialists, were consulted for contextual insights. Semi-structured, in-depth interviews were the primary data collection method, allowing for detailed exploration of participants' experiences, perceptions, and challenges, while providing flexibility to pursue emerging themes. The interviews, conducted in Tamil or Sinhala and audio-recorded, explored participants' experiences, challenges, and opportunities related to digital technology adoption for their businesses, considering the post-conflict context and socio-economic factors.

The interviews focused on several key topics related to women entrepreneurs' engagement with digital technology. Participants shared their experiences using various technologies, such as mobile phones, e-commerce platforms, and social media, in the context of their business activities. Participants discussed the benefits of digital tools, such as improved market access and communication, and the challenges, including limited digital literacy and infrastructure. They also explored how these technologies helped overcome geographical isolation and social restrictions in the post-conflict Northern Province.

Participants discussed the influence of cultural norms, community expectations, and their perceptions of institutional support on their entrepreneurial efforts. Focus group discussions with 6-8 women entrepreneurs from similar sectors facilitated collective reflections on digital entrepreneurship's challenges and opportunities. This study used document analysis to review reports and policies related to women entrepreneurship, digital inclusion, and post-conflict recovery programs in the Northern Province to contextualize findings and understand the policy landscape. Focus group discussions with 6-8 women entrepreneurs

facilitated collective reflections on the challenges and opportunities of digital entrepreneurship.

Data from interviews and focus groups were analyzed using thematic analysis, involving data familiarization, initial coding, and grouping codes into themes like technology adoption barriers and benefits of digital entrepreneurship. These themes were then interpreted to understand digital technology's impact on women's entrepreneurship in the Northern Province. The identified themes were interpreted to understand how digital technology impacted women's entrepreneurship in the Northern Province. NVivo software was used to systematically code, organize themes, store interview and focus group discussion data, and assist in deeper pattern recognition.

Participants were informed about the study's objectives and their role, and informed consent was obtained before data collection. Confidentiality was maintained through the use of pseudonyms. The study was sensitive to participants' socio-cultural and religious backgrounds, ensuring respectful interviews and discussions. Participation was voluntary, with the freedom to withdraw at any time.

Findings

1. Opportunities Created by Digital Technology

Many women entrepreneurs in the Northern Province reported that digital tools significantly enhanced their ability to operate and grow their businesses. Mobile phones, social media platforms (particularly Facebook and WhatsApp), and mobile banking were frequently cited as critical enablers for communication, marketing, and financial transactions. E-commerce platforms, although less commonly used, were perceived as promising channels for reaching broader markets.

Several participants emphasised how digital technology had bridged geographic isolation, enabling them to access customers, suppliers, and training opportunities without needing to travel extensively. Particularly in the post-conflict context where transportation infrastructure remains underdeveloped, digital tools were viewed as powerful alternatives for overcoming mobility constraints.

[Before using Facebook, I used to rely only on local customers. But now, I get orders from Jaffna and even from Colombo. I post pictures of my products, and people message me directly. It's much easier than before.

Textile Entrepreneur (Kilinochchi)

[I learned to use WhatsApp during COVID. Now I take orders through WhatsApp and send updates to my regular customers. It helps me stay connected even when there are transportation issues.]

Food Business Owner (Mullaitivu)

[I didn't know much about online selling before, but a local NGO showed me how to use a simple e-commerce app. It's still new to me, but I think in the future it will help me grow beyond this village.]

Agro-Product Seller (Vavuniya)

[I post offers and pictures on my Facebook page. Sometimes people from nearby towns ask me to come to their house. Earlier, no one knew about my business outside the village. Now, more people are contacting me.

Home-Based Beauty Services (Mannar)

2. Perceived Benefits of Digital Engagement

The use of digital technology was associated with increased efficiency, visibility, and customer engagement. Women noted that social media allowed them to build a customer base beyond their immediate community, while digital payments reduced dependence on cash and improved financial safety. Some women described feeling a sense of empowerment and independence as digital tools gave them control over business decisions and interactions.

Focus group discussions also highlighted peer learning, with many women supporting each other in learning to use digital tools. This informal knowledge-sharing often occurred through community networks, training sessions organized by NGOs, or word-of-mouth.

[I used to wait for people in the village to place orders, but after I started posting on Facebook, I got calls from nearby towns. Now I have more customers, and they even share my page with others. It makes my business look more professional.]

Mobile Retail Seller (Mannar)

[Before, I carried cash everywhere, which was risky. Now I use mobile money. It's safer and faster. I can even keep records on my phone, so I know how much I earn and spend.]

Beauty Salon Owner (Jaffna)

[feel more confident because I don't have to depend on anyone to talk to customers or promote my services. I decide what to post, what to offer, and when. It's my business, and I feel proud.]

Mixed Entrepreneurs (Vavuniya)

[joined a WhatsApp group started by an NGO after a workshop. We share tips, ask questions, and even send photos of what we are selling. It makes me feel like I'm not doing this alone.]

Home-Based Catering Business (Kilinochchi)

3. Barriers to Technology Adoption

Despite the opportunities presented by digital technologies, several barriers significantly hindered their full adoption and utilization among women entrepreneurs in the Northern Province. A recurring issue was limited digital literacy, particularly among older women and those with minimal formal education. Many participants reported a lack of confidence in using digital applications or conducting online transactions independently, often requiring assistance from others. Affordability also emerged as a major constraint; some women relied on shared mobile phones, while others found it difficult to afford smartphones or maintain regular mobile data subscriptions. In addition, language barriers posed a significant obstacle, as most digital platforms, applications, and instructional

materials were available only in English or Sinhala, making them inaccessible to many Tamil-speaking women in the region. These challenges collectively limited women's ability to fully engage with and benefit from digital entrepreneurship.

[I have a phone, but I don't know how to use apps. My son helps me sometimes, but if he is not home, I just wait. I'm afraid I will press the wrong button and lose something.]

Small Grocery Owner (Vavuniya)

[We share one smartphone at home, and it's mostly with my husband. I cannot afford another phone and the internet is expensive. So I use it only when necessary.]

Tailoring Business (Kilinochchi)

[Most of the instructions on apps are in Sinhala or English. I studied only in Tamil. So even if I try, I don't understand what to do. That's why I still do business in the old way.]

Women Entrepreneurs (Mullaitivu)

[Sometimes I see other women selling online, and I want to try. But I don't know how to take good photos or post pictures. Also, what if someone cheats me? I don't trust online money completely.]

Traditional Craft Seller (Mannar)

4. Cultural and Social Constraints

Participants shared that patriarchal norms and traditional expectations continued to influence their business practices. In many cases, women were expected to prioritize household responsibilities, which limited the time and energy they could invest in digital entrepreneurship. Some women reported resistance or discouragement from male family members, especially when using social media for business.

There were also concerns about online harassment or community judgment, particularly in more conservative rural areas. These fears made some women reluctant to advertise their businesses online or share personal content.

[My husband is supportive, but my father-in-law always questions why I am spending time on the phone. He thinks I'm wasting time chatting. When I told him I was selling sarees online, he said, 'Why don't you focus on the house instead?' It's hard to explain that this is real work.]

Home-cooked Meals via Facebook (Kilinochchi)

[At first, I posted pictures of my food on Facebook. But then some men started saying things that made me uncomfortable. One even messaged me privately asking personal questions. After that, I became afraid. My husband said I should just delete the page.]

Handicrafts and Weaving (Mullaitivu)

[We still carry the wounds of the war. Many men in our families are no longer there. As a widow, I have more freedom, but also more judgment. If I speak too confidently online, some people think I'm looking for attention. That's why I only use WhatsApp with trusted contacts.]

Mobile Beauty Services (Vavuniya)

5. Perceptions of Institutional Support

Perceptions of institutional support were mixed. Some women acknowledged assistance from NGOs and community organizations that provided digital literacy training and startup capital, while others expressed frustration over the lack of consistent government support, limited access to digital infrastructure, and minimal follow-up after initial training programs.

Key informants echoed these concerns, noting that although several initiatives existed on paper, their implementation was fragmented and under-resourced. There was a clear demand for sustained, localized support systems, including training in local languages, affordable internet access, and platforms tailored to the needs of rural women entrepreneurs.

[The government talks a lot about helping women in business, but in reality, there is nothing practical. I applied for a grant, but I never heard back. The internet here is so slow, and in some areas, it's almost impossible to connect. How can we run businesses without a good connection?]

Digital Marketing Services (Mullaitivu)

[I attended a training program funded by an international organization. The content was good, and it helped me build confidence. But I feel like the government could do more. I wish they offered training in Tamil, because many women here don't understand Sinhala. I feel left out of national programs]

Beauty Salon (Vavuniya)

[The support I received from the local NGO was helpful at first. They gave us an introduction to using social media, and it was free. But after that, I didn't get much support. I wanted to expand my business, but there are no affordable resources for us. I can't afford a website or even a good mobile plan. Sometimes, I think these programs are just to get attention, but they don't provide real change.]

Traditional Food Business via WhatsApp (Mannar)

6. Impact on Women's Economic and Social Agency

The integration of digital tools into businesses has had a significant positive impact on women's economic and social agency in the Northern Province of Sri Lanka. Women who successfully adopted these tools reported increased income, which not only provided them with financial independence but also empowered them to support their families. This newfound financial stability helped boost their self-confidence and allowed them to gain greater social standing within their communities. In addition to enhancing economic agency, digital technologies also improved women's social agency by enabling them to expand their networks and gain recognition as entrepreneurs. Through these platforms, some women were able to employ other women, fostering a sense of empowerment and leadership within their communities.

However, despite the successes, many women faced considerable barriers to fully realizing the benefits of digital tools. Socio-cultural challenges, such as limited access to digital infrastructure (e.g., smartphones and internet connectivity), family resistance, and low digital literacy, hindered the ability of many women to fully

participate in digital entrepreneurship. These structural barriers left them unable to take full advantage of the opportunities digital technologies could provide. There was also a clear need for more context-sensitive support that could address the specific challenges faced by women in rural and post-conflict areas. Tailored initiatives, such as training in local languages, providing affordable and reliable digital infrastructure, and designing programs with cultural sensitivity, are essential for fostering inclusive digital entrepreneurship and ensuring that women from all backgrounds can benefit from these technologies.

[When I started selling clothes online, my business took off. I can now support my children's education, and I don't have to rely on my husband for money. People in the village started to respect me more. They see me as an entrepreneur now, not just a housewife. I'm even able to hire one or two women to help with the stitching. It's given me a lot of confidence.]

Homemade Sweets Business via Instagram (Kilinochchi)

[Before I used Instagram, I only sold sweets at the local market. My income was low, and I was just another vendor. But now, I have customers from all over the country. I can send orders through courier services, and I've been able to grow my business. I feel proud that my business is recognized beyond my village. It has made me feel more independent.]

Freelance Writing and Translation (Vavuniya)

[At first, I was afraid to work online. But when I joined a digital skills program, it opened doors. I now work with international clients and earn more than I did as a teacher. I don't need to leave my home, and I can manage the family. But I do wish there were more women like me in the field. The local community still doesn't understand this kind of work.]

Beauty Salon Marketing via Facebook (Mannar)

[Using digital technology has been empowering for me. I have a better income now, and I feel proud to share my artwork online. But sometimes, I feel isolated. The people in my community don't understand this new way of working. They still expect me to spend all my time at home. They don't see the business as 'real work.].

Online Clothing Store (Jaffna)

Discussion

Prior research shows that mobile phones and social media platforms greatly benefit women's entrepreneurship, especially in rural South Asia, by facilitating communication and business transactions (Tanti et al., 2021). Platforms like Facebook and WhatsApp offer women cost-effective ways to connect with customers, expand their market, and overcome geographical limitations (Tisnawati et al., 2020). Digital tools have enabled women entrepreneurs in Sri Lanka's Northern Province to expand their customer reach beyond local areas. (Yusuf et al., 2024). Women entrepreneurs in post-conflict zones face challenges like limited access to digital resources, skill deficits, and socio-cultural obstacles. Customized support programs are needed to ensure digital technology enables rather than hinders these women-owned enterprises.

Digital technologies enhance women's entrepreneurial visibility and control over marketing and customer relationships (Ajjan et al., 2014). This is evident in the experiences of women entrepreneurs in Sri Lanka, such as the beauty salon owner in Jaffna, who reported feeling more independent due to using Facebook for promotion. Digital payments and mobile banking also reduce women's reliance on cash, improve financial management, and enhance their economic agency (Diaz-Pardo & Rao, 2024). Despite the advantages of digital technology, concerns exist regarding data security, privacy, and potential digital exclusion among marginalized groups.

Digital literacy, affordability, and language barriers are key obstacles to adopting digital technology (Gevers & McManus, 2020). Digital illiteracy is a major barrier to women's participation in digital economies. (Antonio & Tuffley, 2014) Laghssais & Mingol note that rural women often struggle to afford technology and maintain internet access, hindering their digital engagement. (Laghssais & Mingol, 2021). Women in Sri Lanka face challenges in using digital tools due to a lack of confidence and affordable access to smartphones and mobile data.

Cultural and social constraints that hinder women's participation in the digital economy are a significant theme in global literature (Rahman and Quadir, 2020). These norms limit women's business activities or social media use for commercial purposes. (Azubire & Hongbin, 2017). Molla and Licker contend that in conservative societies, women encounter stigma and harassment in public digital spaces, a concern shared by women in Sri Lanka's Northern Province (Shanmuganathan & Shanmugathas, 2021). Online harassment and family disapproval discourage women from promoting their businesses online, highlighting the need to address cultural and technological barriers for women's digital entrepreneurship.

The mixed perceptions of institutional support indicate that while NGOs and development organizations offer valuable initial resources, sustained, localized support is lacking for women entrepreneurs which findings are supported by the previous research of Mashapure et al., (2023). Government programs supporting women's digital entrepreneurship often lack resources and consistent support (Wang & Zhang, 2024). These findings align with the Sri Lankan context, where women expressed concerns about the lack of consistent and localized support from governmental institutions and the inadequacy of infrastructure for digital entrepreneurship.

Digital entrepreneurship empowers women economically and socially, increasing their financial independence and social standing (Krieger-Boden & Sorgner, 2018). This is especially relevant in post-conflict areas, where digital tools have helped women generate income despite social and infrastructural obstacles (Maracine, 2019). Similarly, digital technologies empower women to expand their networks and gain recognition as entrepreneurs, fostering empowerment (Mashapure et al., 2023). Women in Sri Lanka's Northern Province reported increased confidence, community respect, and improved economic outcomes through digital tool engagement.

Digital tools offer opportunities for women entrepreneurs in Sri Lanka's Northern Province but also reveal barriers. The study's findings align with literature on digital technologies' potential for women's economic empowerment, emphasizing tailored interventions to address literacy gaps, infrastructure limitations, and socio-cultural barriers. Further research and sustained institutional support are crucial for inclusive digital entrepreneurship, especially in post-conflict and rural settings.

Conclusion

Digital technologies hold substantial promise for women entrepreneurs in Sri Lanka's Northern Province, potentially boosting their economic independence and social empowerment. However, their effective use is hindered by factors like inadequate digital skills, costly infrastructure, socio-cultural norms, and familial opposition. The study emphasizes the importance of customized, community-based initiatives, including digital literacy programs in local languages, affordable internet options, and culturally aware programs. Moreover, encouraging local digital content creation, establishing digital resource centers, and promoting public-private partnerships are crucial for fostering a supportive ecosystem.

To facilitate women's success in leveraging digital technologies, policymakers and development organizations should focus on establishing comprehensive support structures that address existing impediments. Strategic investments in infrastructure and enhanced access to digital resources, coupled with ongoing educational initiatives and mentorship programs, are essential. Furthermore, intervention strategies should be carefully designed to consider cultural nuances and familial influences to ensure relevance and effectiveness.

Acknowledging the study's limitations, the generalizability of findings may be constrained by the unique post-conflict environment of the studied region, as well as challenges encountered during participant recruitment in remote areas. While efforts were made to engage a diverse participant group, the geographic focus limits the scope of experiences captured across Sri Lanka and other post-conflict zones. Furthermore, the reliance on qualitative interview data may restrict broader generalization, indicating a need for further research to evaluate the sustained effects of digital entrepreneurship on women's economic and social outcomes.

Future scholarly investigations should examine the enduring effects of digital technologies on women's entrepreneurial activities within post-conflict zones. Longitudinal research designs would offer critical perspectives on the sustained influence of digital tools on women's economic autonomy, social empowerment, and the long-term viability of their businesses. A comparative analysis of women entrepreneurs' experiences across various regions within Sri Lanka, or among different post-conflict environments, could reveal location-specific challenges and prospects. Such insights would facilitate the development of more refined, contextually appropriate recommendations.

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Thematic Map

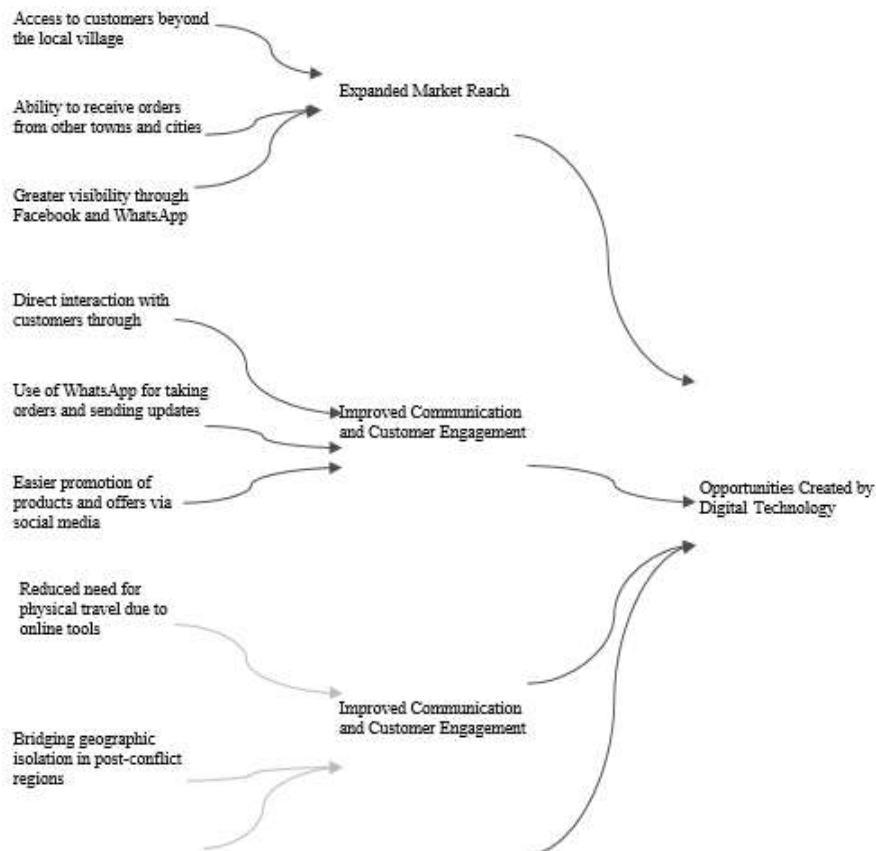


Figure 1: Thematic Map: Digital Technology to Foster Inclusive Women Entrepreneurship in Post-Conflict Northern Province (Cont.)

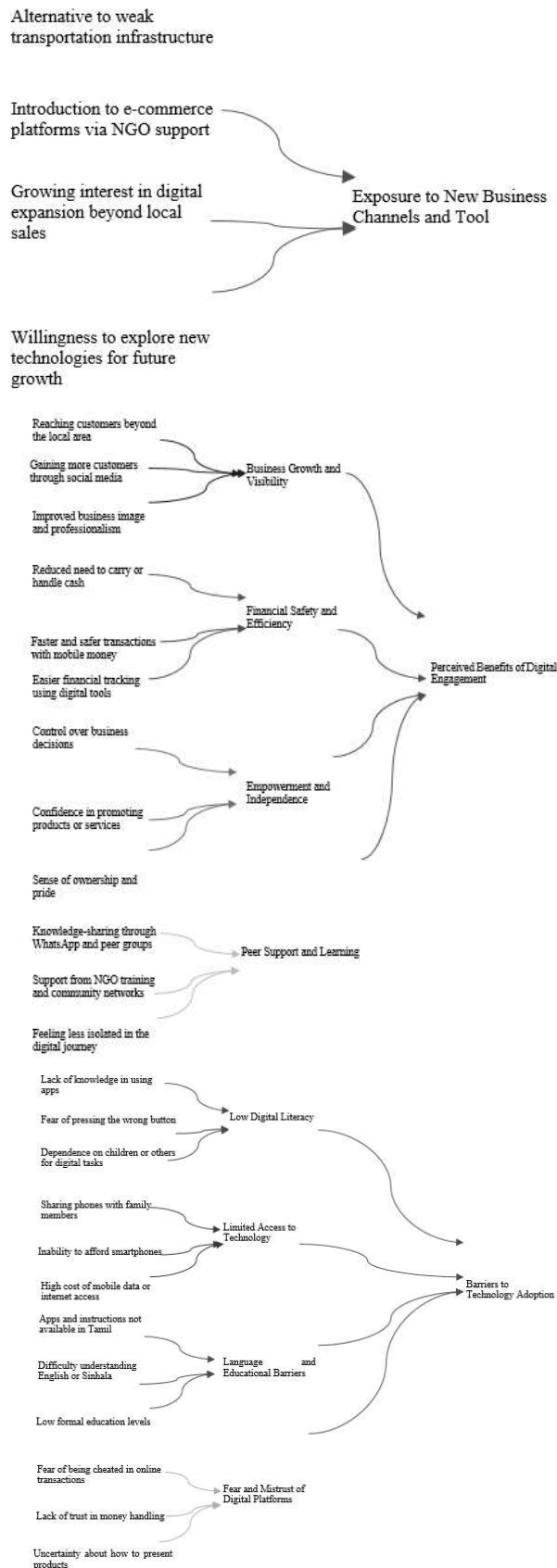


Figure 1: Thematic Map: Digital Technology to Foster Inclusive Women Entrepreneurship in Post-Conflict Northern Province (Cont.)

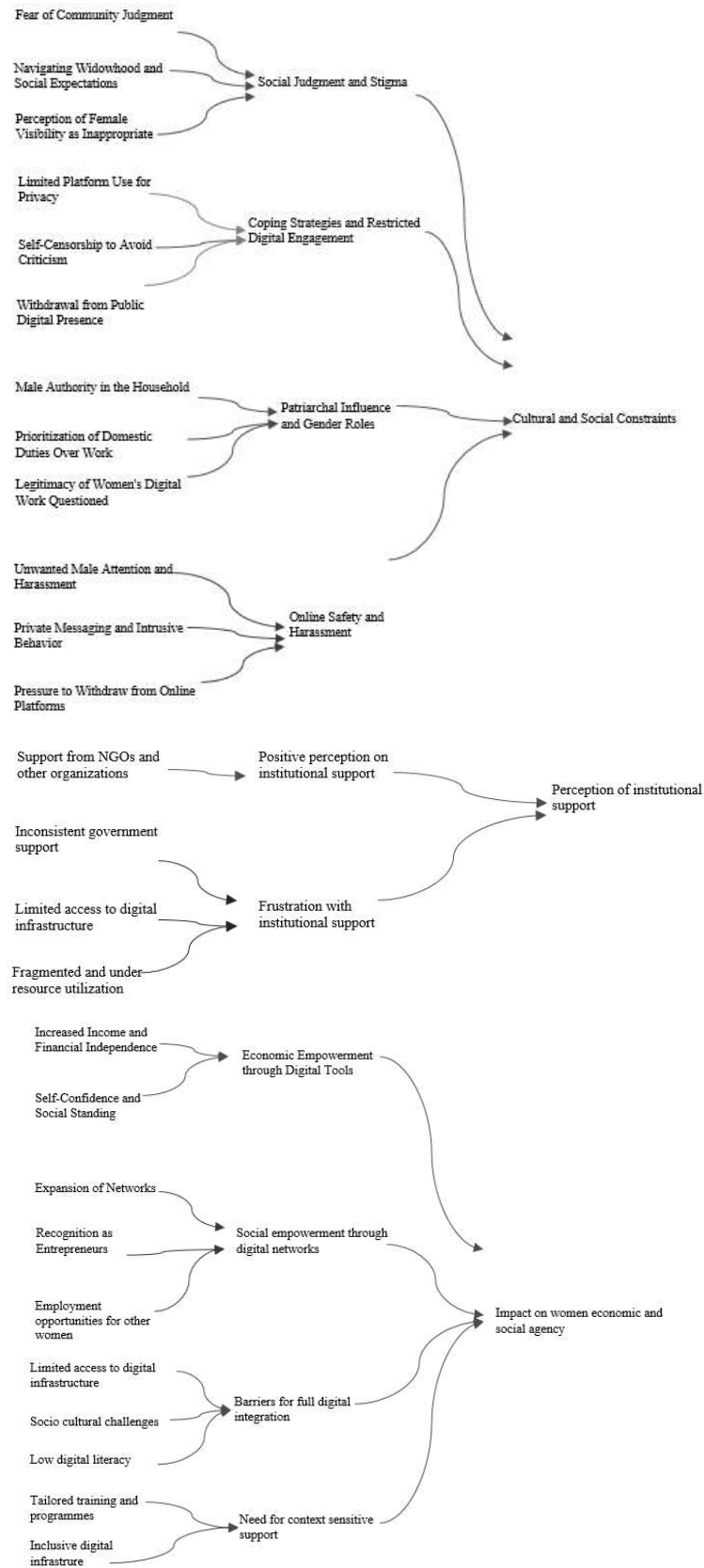


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