



## Digital Infrastructure as a Catalyst for Women Entrepreneurship: A Qualitative Study from Karnataka

Sai Harshita Dewangan<sup>1\*</sup> and K. Yogeshbaba<sup>2</sup>

<sup>1</sup>Post Graduate in Economics, Department of Humanities and Social Science,  
Sathya Sai University for Human Excellence (Karnataka), India.

<sup>2</sup>Assistant Professor, Department of Humanities and Social Sciences (Karnataka), India.

(Corresponding author: Sai Harshita Dewangan\*)

(Received 12 April 2025, Revised 23 May 2025, Accepted 12 June 2025)

(Published by Research Trend, Website: [www.researchtrend.net](http://www.researchtrend.net))

**ABSTRACT:** Although women entrepreneurs play an important role in economic development, they still continue to face financial, structural, and socio-cultural barriers in their journey towards growth. This study identifies opportunities for women entrepreneurs in Karnataka, focusing on how digital infrastructure influences their business scaling and sustainability by also bringing into light their struggles and challenges by using qualitative approach-in-depth interview of nine women entrepreneurs across various sectors for the same. The findings suggests that gendered barriers such as, restricted access to finance, workplace partiality, and societal expectations, remain major challenges. Despite these challenges, digital infrastructure has become a significant tool for progress allowing women entrepreneurs to expand their businesses through social media, digital payment systems, e-commerce, and automation tools. However, the gap in digital literacy exists, making it difficult to utilize all available resources fully. To overcome these challenges, women entrepreneurs adopt strategies such as business diversification, building strong connections, mentorship, and learning digital skills. These strategies not only help them to stay strong in entrepreneurial activities but also ensure to long-term economic success. The study finds that while digital tools provide new opportunities for women entrepreneurs, targeted policy interventions, financial support, and digital literacy programs are needed to close existing gaps.

**Keywords:** Women Entrepreneurs, Digital Infrastructure, Business Scaling, Financial Barriers, Gender Challenges, Digital Literacy.

**Abbreviations:** MSMEs – Micro, Small, and Medium Enterprises, GSDP- Gross State Domestic Product, GDP- Gross Domestic Product, LFPR- Labour Force Participation Rate, WPR- Work Participation Rate, PLFS- Periodic Labour Force Survey, UNCTAD – United Nations Conference on Trade and Development, SMEs- Small and Medium Enterprises, ICT- Information and Communication Technology, VCs-Venture Capitalists, SEO- Search Engine Optimization.

### INTRODUCTION

India is one of the fastest-growing economies in the world with significant contribution being drawn from several sectors (Radhicka Kapoor, 2024). According to 73rd round of national Sample Survey (NSS), conducted by National Sample Survey Office, Ministry of Statistical and Programme Implemented across the period 2015-2016, there existed 63.3 million informal non-agriculture MSMEs in the same nation engaged in various economic activities out of these, 60.8 million (95.98%) MSMEs were privately owned enterprises (Radhicka Kapoor, 2024). There existed control of Males in the ownership of privately owned MSMEs. Among that private owned MSMEs 79.63% businesses were operated by Men and also just 20.37% were by females (Radhicka Kapoor, 2024).

Karnataka as amongst the highest economic growth places in India. The economy of the state was anticipated GSDP (Gross State Domestic Product) to increase by 9.5% in fiscal year 2021-2022. During the past ten years, Karnataka has experienced the highest growth rate in Gross Domestic Product (GDP) as well as Per capita income compared to other states. In 2022-2023, the total expected GSDP of Karnataka is approximately \$240 billion. In Karnataka, around 41% of the workforce relies on agriculture and around 21.5% workforce relies on industries. Karnataka boasts one of India's highest female labor force participations (LFPR) percentage belongings and female work participation rate (WPR) of 31.5% based on the periodic labor force survey (PLFS) 2021-2022 (Trisha Chandra, 2023).

Digital business has been posited to transcend obstacles in the organizational environment, including dissuading social norms, with fewer barriers to entry permitting

business ownership equalization (McAdam *et al.*, 2019). In the corporate world, these online tools are identified as revolutionary innovations transforming the previous stable and static business arena to a more flexible and dynamic system (Salamzadeh *et al.*, 2024). Significant advancements attained in online technology particularly post-COVID-19 can be an integral component in bridging the gaps between men and women as entrepreneurs by reducing the challenges faced by women business owners (Torres *et al.*, 2021). Women are expected to embrace online platforms to take part in business ventures, accumulating information and booting awareness to improve household welfare (Nur Asrofi *et al.*, 2023). However, despite such advantages it still engages in a debate on whether digital tools actually empower women or simply replicate existing gender inequalities in the digital economy (Gillwald & Partridge 2022). Although numerous researchers have demonstrated the impact of digitization on the success of small firms, little is practically known regarding whether the benefits of internet usage among MSMEs accrue to more than the firm itself and lead to improvement in the family livelihood (Zhao *et al.*, 2025).

This study is relevant since India is the world's fastest growing digital technology and services economy with its largest share of GDP. Though there are also problems with gender equality, yet women entrepreneurs could utilize digital solutions to numerous challenges based on gender bias.

## REVIEW OF LITERATURE

From various studies, most of the research conducted on the contribution that digital infrastructure makes to entrepreneurship has been conducted within the developed world, with hardly any focus being placed upon developing economies like India (Soluk *et al.*, 2021). Given the unique culture, society and economy of a state like Karnataka, it is necessary to study how digital system influences the economic potential of women entrepreneurs in such an area (Kumar & Muthamma 2023).

In an effort to identify the most essential variables for the study, an amazing extensive review of the literature on women entrepreneurship, digital infrastructure, and economic empowerment was undertaken. This assisted in developing factors that have been taken into consideration by scholars while carrying out research on the impact of digital progress on women entrepreneurship, especially in the developing world. The most essential variables for this research, as identified during the literature review, are:

**Access to digital tools:** (Jalan & Gupta 2019) discussed the way access to online platforms and tools influences the extent of women being entrepreneurs. Digital technologies enables entrepreneurs being responsive to information and receptive to new knowledge. (Lyons & Zhang 2023; Salamzadeh *et al.*, 2024; Shao *et al.*,

2022). Socio-economic conditions in most developing nations act as a dampener, discouraging women towards digital entrepreneurship (Huang *et al.*, 2025).

**Finance:** there are some studies that provide the problems that women experience when attempting to access the financial systems, women have no choice but to rely on the informal financial channels, which may be costly and unworthy (Isaac, 2014). likewise, financial exclusion and low digital literacy keep those women entrepreneurs out of electronic payment schemes or getting suitable credit online (Hasan *et al.*, 2022). They stand at a disadvantage when it comes to capital access, and most of them operate low risk, small-scale ventures with little scope for expansion (Majumdar & Mittal 2025). Patriarch societies limit women's access from accessing funds, which restricts them when making investments in technology in business expansion (Choudhury, 2009).

**Skills:** A large digital capacity and literacy abilities for women any day allow to create new innovation products, extend the customer base (Salamzadeh *et al.*, 2024). Digital literacy also brings strength to women so that when they make transactions online, they are more confident (Debbarma & Chinnadurai 2023) Women-friendly flexi work opportunities can also enhance their abilities (Luo & Chan 2021).

Women digital skills gap identified that women entrepreneur lacks the technical know-how, required to handle expensive digital equipment, which does enable them to create appropriate digital marketing campaigns and engage with customers online (Sowmya & Pai 2025). Women's digital illiteracy does not enable them to use maximum online shopping portal chances, leading to missed business opportunities (Choudhury, 2009; Dy *et al.*, 2016).

**E-commerce:** Women are able to increase their business to beyond local markets through digital platforms such as mobile apps to reach consumers at the national and international level (Alshaar, 2023). Digital platforms like Amazon, Flipkart, and Alibaba offer women with a platform to market their products to a much wider audience (Mishra, 2023). Social media sites such as WhatsApp, Facebook, and Instagram are de facto virtual business websites through which women entrepreneurs offer their products and engage with customers. Social media is not only used by the majority of women to promote business but also for transactional purposes transactions as well as professional networking (Singh & Singh 2024).

**Barriers:** Women in the majority of patriarchal societies are bound by conventional gender roles to deny them control and use of digital tools (Dy *et al.*, 2016). Such social norms prefer domestic work to their entrepreneurial activities, thereby making it difficult for women to engage in digital technologies (Choudhury, 2009). Women lack financial resources, such as online credit facilities and electronic payment systems, which deters women from venturing into online businesses

further (Appaya & Abbas 2024). The majority of women do not possess the necessary skills to leverage the use of online platforms to full capacity for business development (Cooke & Xiao 2020). Cyberbullying and intimidation on the internet make virtual communities insecure for women entrepreneurs (Narayani, 2024). Threats of being targeted in cyberspace discourage a large majority of women from using online platforms actively, negatively impacting their businesses (Golzard, 2019).

**Gender:** Women, particularly in male-dominated sectors, do not have confidence in their business abilities, i.e., no or little help from society and family (Cooke & Xiao 2020). Digital resources are not easily accessible to women since household chores are given more priority. Men dominate access to technology, i.e., digital resources are not accessible without men's intervention (Davaki, 2018). The social norms render the women reluctant to pursue business, making their career secondary duties to raising a family (Kandt, 2022). The "double burden" effect of the women being responsible for home chores and business operations and the balancing process leading to time limitations, which hampers their ability for business expansion and online networking (Aziz, 2024).

**Education:** Women's confidence in independent digital transaction management of digital transactions and also, women with good digital and business abilities are more likely to build (Wiig *et al.*, 2023) their online ventures and build their businesses (Barnhard & Olsson 2020). Marginalized groups are also kept out of education in digital entrepreneurship (Ghauri *et al.*, 2022). Without education, women will be less likely to use sophisticated digital tools, leading to little business success (Dy *et al.*, 2016).

**Research Gap:** Recent scholarly works show an increase in digital technology's role in helping women set up businesses, especially in less-developed areas (Salamzadeh *et al.*, 2024). Because of digital expansion after the pandemic, Indian women now have more opportunities to create and grow businesses. Even with all these alternatives, many women still have issues accessing funds and do not have the required digital knowledge (Hasan *et al.*, 2022; Majumdar & Mittal 2025). Even Kumar & Muthamma (2023) showed how women entrepreneurs in Karnataka use digital tools, we still do not have much research on the bigger impact of this on households and local areas (Zhao *et al.*, 2025). Here, the researchers try to fill this gap by exploring the effects of digital enterprises on the business success of women, the well-being of their families and support provided to their communities in Karnataka.

## OBJECTIVES OF THE STUDY

Besides, despite how empowering digital technologies are usually believed to be, studies don't really examine whether they decrease the gender barrier, or even emulate the same inequities present in the real world.

Digitally. With a view to filling such limitations, this study aims to look at:

- How to identify chief digital technologies contributing to women entrepreneur growth in Karnataka.
- Identifying challenges and constraints that limit the use of digital technologies by women.
- Analyzing how women use digital tools to overcome gender and societal obstacles and proposing policies to encourage inclusivity.

## CONCEPTUAL FRAMEWORK OF THE STUDY

To measure the extent to which the digital infrastructure is enlarging economic opportunities for women entrepreneurs, the current research employs a multi-theory framework. Three theories – Kabeer's Empowerment Model, Sen's Capability Approach, and Dual Systems Theory – are employed by this research work. The three theories offer different accounts of the economic and social factors that affect the status of women in entrepreneurship.

**Kabeer's Empowerment Model.** (Kabeer, 1999) Empowerment is the ability to make drastic choices that create changes in your life when there were no options previously. Theory-based model has three determinants:

- Resources provide capital, education, institutional support, and training. Digital infrastructure is a resource as it offers market access, finance, and entrepreneurial support. For example, similar to (United Nations Conference on Trade and Development) UNCTAD's eTrade for Women initiative that trains women entrepreneurs in training, mentoring, and networking. Such initiatives enable such barriers like inadequate finance and inadequate access to online platforms to enable women to expand their enterprises (UNCTAD's eTrade for Women Advocates, 2022).

- Agency enables women to make independent choices. Agency is facilitated by digital technology as women can engage in entrepreneur activities and empowered decision-making in the business (Bandura & McLean 2024). The virtual business platforms offer space flexibility and time during work, enabling women with caregiving duties (Shamika & Ratnakar 2023).

- Achievements refers to the total empowerment when social and economic outcomes are attained through entrepreneurship. Women entrepreneur and digital technology attain financial independence, business development, and elevated socio-economic status. For example, digital media like Murukali in Rwanda made it cheaper and shorter in time, hence expanding market sizes (Shamika & Ratnakar 2023)

**Sen's Capability Approach.** (Denis O'Hearn, 2009) informs us that empowerment can also be measured in real/actual freedom and choice exercised by individuals as well as income. Sen's Capability Approach has two components:

- Functioning's are really activities that individuals do like business control. Women entrepreneurs who own business websites online have more control over their

business by streamlining processes and improving customer interaction (Thakkar, 2024).

• Capabilities is freedom to enjoy working's. Digital infrastructure maximize capabilities by providing women low-cost internet, education, and e-commerce solutions (Kulaksiz & Rafi 2021; Shamika & Ratnakar 2023).

**Dual Systems Theory.** (Hartmann, 1979) Dual Systems Theory reminds us how capitalism and patriarchy mobilize women in futile ventures since money-earning spheres are profitable for men. Women venture into businesses even as finances remain men's business in the household. Following Dual System Theory, which our present study espouses, web-based resources are not adequate for access per se but we need to chop down structural obstacles in an effort towards achieving true profitability of female businesswomen.

## RESEARCH METHODOLOGY

In responding to the research question, we employ in-depth interview techniques that are especially adept at examining poorly understood processes such as how digital is used by women entrepreneurs (Wiig *et al.*, 2023). We decided to write about Karnataka as it is one of the leading IT hubs of India.

**Data Collection.** To respond to our research question we use in-depth interviews which are constantly used in research on women's entrepreneurship participants were recruited using a combination of purposive and snowball sampling (Wiig *et al.*, 2023). To recruit

prospective participants, we reached out to women entrepreneur online business networks and women-owned business associations in Karnataka we sent out invitations to participate in the study to leaders. We used snowball sampling to get referrals from our networks we used purposive sampling to access women who co-founded or established companies that leveraged digital tools strategies or business models we made sure we accessed women in diverse industries such as technology, agriculture, retail, education, beauty and wellness.

Data was collected in certain cities and district of Karnataka state. We conducted 9 semi-structured interviews taking into account the saturation points where data collection or analysis no longer adds new information or insights. Either English or Kannada interview as preferred by the participants was conducted. The Kannada interview was translated by the researcher and analyzed each interview lasted between 30 to 40 minutes.

**Some specific themes were:**

- Reasons for starting businesses
- Problems encountered as women entrepreneurs
- Digital tool's role in business growth and operation
- Family, social and governmental support for women entrepreneurs.

The information was transcribed and analyzed thematically to establish recurring patterns and insights about digital adoption by women entrepreneurs in Karnataka.

**Table 1: Overview of interviews.**

Informant	Age	Educational Level	Area of Business	Motivational Background for Becoming an entrepreneur
1	30	Masters in computer science	Technology (Cloud-based Digital Solutions)	Inspired by a Harvard University product challenge and corporate experience at Goldman Sachs. Wanted to create cost-effective digital solutions for emerging economies and institutions. Passion for innovation and problem-solving in digital transformation.
2	25	Pharmacy Graduate	Art (Portraits, Online Art Classes, Live Painting)	Passion for art, wanted to turn hobby into a full-time career
3	36	MCA Computer Science	International Procurement and Training	Desire to create a meaningful impact and work independently after a long corporate career
4	41	Company Secretary & Law Accounting, Legal Work	Holistic Wellness (Satwa Awakening)	Life-changing health event (brain hemorrhage) led to interest in holistic healing and wellness
5	24	Diploma Electronics and Communication	Salon and Beauty Services	Gained experience in hotel management but wanted independence and saw long-term potential in the beauty industry
6	35	M.A. PCS	Book Manufacturing industry (Sai Shiva Industry)	Started with accounts and production after marriage, then gradually took on a leadership role. Enjoys managing operations and improving efficiency.
7	45	Medical Degree	Medical Superintendent	Worked as a gynaecologist before leading a hospital. Passionate about improving healthcare and managing hospital efficiency.
8	35	Marketing and business experience	Marketing and branding (Umanshi Marketing)	Worked in marketing for 20 years. Noticed startups struggle with branding and wanted to help them grow. Loves marketing and business strategy.
9	45	ESCL	Paper plate manufacturing	Started in 2011 but took a break. Later resumed wholesale production. Wants to grow further with digital tools.



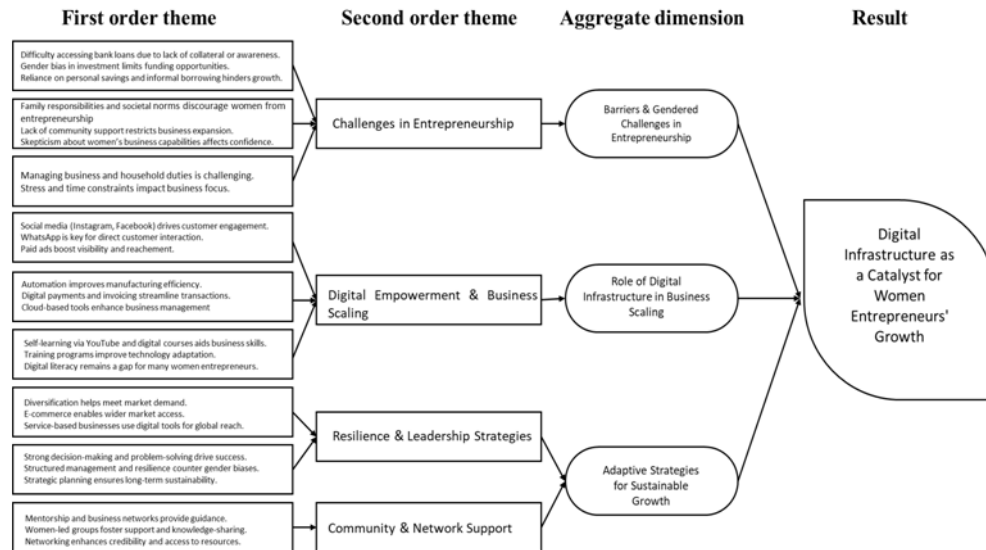
Table 1 gives the overview of the interview we conducted. Based on the same, thematic analysis is done, as shown in Fig. 1.

## RESULTS AND DISCUSSION

### A. Barriers and Gendered Challenges in Entrepreneurship

Women entrepreneurs face multiple gender-based barriers that slow down their business growth, including financial challenges, societal expectations, and

workplace biases. These findings align with recent research that underscores the ongoing gender-specific challenges faced by women entrepreneurs both in India and around the world (Appaya & Abbas 2024; Hasan *et al.*, 2022; Salamzadeh *et al.*, 2024). There exist gendered entrepreneurship challenges and hindrances, and among them, there are financially related obstacles as well as socially and professionally determined barriers.



**Fig. 1.** Thematic analysis of Key Challenges and Digital Strategies Adopted by Women Entrepreneurs.

This summary chart presents essential findings through a graphical format. The relationship dynamics between difficulties, digital competencies, resilience methods, societal backing determine how women business owners expand their ventures.

An obstacle is mainly a financial barrier because most of the women have no capital or money to run their businesses with. Due to the high price of raw material and the costs involved in undertaking business, the women are limited in growing and maintaining their own businesses. This is in line with (Majumdar & Mittal 2025), who observed that institutional biases and the absence of collateral continue to be significant barriers for women entrepreneurs trying to access formal financial support. As an artist respondent 2 so eloquently phrased it: *"The materials which I use for my art business are so costly. I have to spend a great portion of my profits just to purchase materials. Without capital, one cannot have the means to implement large-scale projects or expand."*

Respondent 3 described how few women know that money opportunities exist for them and stated: *"There are government schemes and loans, but the women don't always know about these opportunities. Banks still don't want to give money to women entrepreneurs. Many women don't even know that the government have male guarantors or extensive paperwork. There is still*

*that mentality that women require money from men."* Similar challenges in accessing formal financial systems have also been observed, reflecting the experiences documented in recent research (Hasan *et al.*, 2022).

Respondent 9 revealed banks' unwillingness to loan women entrepreneurs' money by stating: *"It is hard to get a loan. Banks demand too much paper, and usually the property and assets are men for the family members. We settle for whatever we have."* Respondent 1, who is a business owner of technology company, clarified the gender bias in capital funding as follows: *"Only 2.5% of women-owned technology firms in the world are able to raise venture capital." Investors held companies owned by women to be riskier due to social bias and because women have family obligations that will take priority over business."*

Similarly, respondent 8 who own a business which has stake at stake in a marketing firm, wherein they detailed how gender discriminations impact business deals: *"Clients expect that since I am a woman I may not be strong enough in bargaining. There is an expectation that I negotiate a lower price or worse conditions than a male counterpart."* This kinds of stereotypes are frequently discussed and well-documented across existing literature (Appaya & Abbas 2024; Gillwald & Partridge 2022).

Respondent 4, who operate a well-being Centre, also indicated to us that business women are not considered serious: *"Even years into operating my business, people still ask me if it is just a side hobby. Women entrepreneurs are not taken as seriously as men in business."*

Aside from economic constraint, gender stereotypical roles hinder women from being entrepreneurs. Respondent 6, who admitted that it is very difficult to do running home in addition to running a business, testified: *"Even if I take most of the production, still housework must be done. Women are not exempted from doing housework because the responsibility of doing them necessarily lies on our shoulders, thus it is that much harder for us to just concentrate on building a business."* Women must be stern and set an example daily. Vendors and suppliers sometimes think that I require my brother or husband's consent to make business decisions. This issue is also emphasized in the work of Kandt (2022); Wiig *et al.* (2023).

Also, respondent 5, who had switched from hotel business to the salon business, added that cultural values discourage women from taking risks, and he continued: *"Family members often tell women, 'Why take a risk of doing business? Why do not have a stable job opportunity?' But being an entrepreneur requires taking risk, and some do not believe everyone is helpful towards women who would like to engage in businesses."* This highlights the risk-avoidant mindset and insufficient support systems noted by Salamzadeh *et al.* (2024). Respondent 7 also added that female leaders are increasingly criticized: *"Because you're a woman, your judgments are questioned more. You must double your efforts to be in a position to prove yourself as a leader, although you are as or more qualified than their male counterparts."* These findings align with the results reported by Cooke & Xiao (2020)

These examples show how women entrepreneurs are confronted with economic as well as social problems, which make it harder for them to be heard and expand their businesses.

#### *B. Roles of Digital Infrastructure in Business scaling*

It can be seen from Table that technology and digital platforms have played an important role in helping women entrepreneurs in overcoming market obstacles, growing their market, and running their business more effectively (Mishra, 2023; Salamzadeh *et al.*, 2024). The greatest advantage of digital tools is that they allow businesses to access more customers. Respondent 4, who owns a wellness Centre, explained how technology enabled her to grow her business and build a brand name: *"We made use of WhatsApp, Instagram, and Facebook a lot during COVID-19. We brought all our services online, had contracts signed digitally, and even conducted workshops on Zoom. Had we not had technology, we could not have survived the pandemic."* Similar experiences were reported by Torres *et al.* (2021), who found that adopting digital technologies

was essential for maintaining business operations during the pandemic.

For most women, social media and websites have been the key to accessing customers. Respondent 2, a career artist, explained how Instagram changed her business: *"I was posting my work on Instagram regularly, and for eight months, nothing was happening. But then, one video went viral with 15 million views, and from there, my business took off. Now, I have students from different countries coming to my online classes."* Respondent 9 also pointed out the manner in which customer interaction has been simplified by using digital payments and WhatsApp business: *"Customers no longer need to visit my shop. They just message me on WhatsApp, order and pay through google pay.it saves time and brings more customers to me outside of my area."* Stories of digital success are becoming more and more frequent (Singh & Singh 2024).

Aside from advertising, electronic payment systems have streamlined transactions and secured them. Respondent 3, a proprietor of a company that does international purchasing, testified to her experience of online transactions: *"Earlier, we had to go to banks for every transaction, which took a lot of time. Today, with online banking and electronic bills, we can do the transactions anywhere, which saves time and money."* The adoption of digital payments is supported by research showing that digital financial tools improve the efficiency of women's businesses (Hasan *et al.*, 2022)

Aside from advertising and retailing, women have been able to adjust automation and productivity-improving tools via digital media. Respondent 6 with a semi-automatic factory reported: *"we have a half-automatic process here, but our other factory is automated. The full automation system only uses seven employees against 20 in the half-automatic process. Digitalization has eliminated unnecessary labor and allowed for effective production."*

Respondent 1, who was a businessman in the tech industry, commented on how women are able to surmount traditional mobility barriers with access online: *"One of the greatest benefits of digital platforms is that women do not have to move about or physically be present somewhere in order to do business. Digital technology and e-commerce enable them to do business from home with worldwide reach."*

To the most part of women business owners, respondent 8 made the point that technology is within reach, yet digital literacy and awareness are a much bigger obstacle: *"The problem is not availability of digital tools but having the know-how on how to make good use of them. Small-town women entrepreneurs would gain from locally available digital upskill training where they are taught about SEO, paying advertising, and ecommerce strategies (Debbarma & Chinnadurai 2023; Sowmya & Pai 2025)."*

Respondent 9, who is an owner of a manufacturing company, remembered her initial digital payment experience: *"I used to accept only cash. When I started accepting digital payments, I was aware that it was convenient but it took me time figuring out how to do it properly."*

Respondent 5, whose salon utilizes social media advertising, had this to say: *"I had to learn on my own everything about creating ads, promoting posts, and using computer software. There was no training, so I learned by watching YouTube and internet training."*

Despite these difficulties, digital infrastructure has given women greater autonomy, whereby they are able to carry out their business activities without the interference of intermediaries or male relatives.

### *C. Adaptive Strategies for Sustainable Growth*

Women business owners have found strong determination to persevere with their businesses and battle through struggles, adopted strategic business approaches, and formed strong support structures.

Business diversification has been among the most potent strategies. Respondent 5, for instance, diversified her salon services to be competitive, because she stated: *"You cannot rely on one service. The fashion changes every three months, and other ways come about. I also regularly update my services and bring in new packages to attract more clients. I came to understand that dependency on the salon services alone was not sufficient. Nowadays, I also offer bridal makeup and even beauty workshops, which have increased my revenues and brand value. The beauty industry is highly competitive. If I remain dependent on the conventional trends, then I will likely lose my customers. Thus, I periodically update services, from time to time, launch new treatments, and manage customer expectations through social media feedback."* These findings align with (Wiig et al., 2023), who emphasized that innovation and adaptability are key factors for the success of women-led businesses.

Similarly, respondent 2 diversified her sources of income by conducting art commissions, online lessons, and live painting at events, quoting: *"I do portraits, teach online, and even paint live at weddings."* Having multiple income streams ensures that if one decelerates, I still have other means to keep my business going."

In addition, respondent 5 explained how ongoing learning and innovation in remaining consistent with new marketing trends assisted in keeping her business current: *"The marketing environment continues to evolve. I make sure that I remain current- whether learning about AI-based marketing tool or latest social media algorithms."*

Most women entrepreneurs also acquire effective leadership and management skills in order to do business effectively. Respondent 1, a technology entrepreneur, stated that women entrepreneurs must place themselves on the outcome and sustainable business result platform: *"Investors will assume*

women-owned companies won't scale. My strategy was simple: build a product so robust that it promotes itself. Now, after four years, VCs are approaching us instead of our approaching them."

Respondent 3, with a business in Multiple locations, said: *"Leadership involves planning and decision-making well considered quickly. I do Branding and marketing, and my husband does business development. Females should grab the responsibility and make individualized decisions to provide long-term growth. Women entrepreneurs are risk-averse; however, planning and embracing solidly conceived risk can spur enterprise without damaging stability."*

*One of the best things a woman entrepreneur can do to create for herself is believing in her decision-making capabilities. We have to make wise risks, invest wisely, and be wise when negotiating in striving to thrive with a competitive economy"*.

Most of the entrepreneurs also bring a crucial question of networking and mentorship. Respondent 7 described how learning from experienced professionals assisted her to grow: *"Women who go through formal mentorship programs and networks become assertive and informed. Empowering each other, we form networks."* Learnings from experienced professionals assist in making sound decisions and industry information." Research shows that mentorship significantly contributes to better entrepreneurial outcomes for women (Nur Asrofi et al., 2023).

In addition to professional relations, family support is also necessary for business viability (Barnhard & Olsson 2020). Respondent 6, a proprietor of a larger business, described her collaboration with her husband: *"Earlier, my husband did everything, but now I am actively involved in negotiations and factory management. We share tasks, which makes it easier to develop the business. We learn constantly and improve our skills."* Having completed business course training, I have gained new means of conducting production and how to interact with people."

Lastly, respondent 3 revealed the necessity of work-life balance and stress management: *"Being in business is stressful, and as a woman, we have several responsibilities. I have learned to set boundaries and delegate, which has helped me to keep my business for the long term."*

These strategies reveal not only that women entrepreneurs are coping against adversity but also are thriving positively on their businesses with innovations, grits, and continuing learning (Kandt, 2022).

### **LIMITATIONS OF THE STUDY**

While this study provides valuable insights into the experiences of women entrepreneurs in Karnataka, it has certain limitations. The research is based on a specific region, which limits the ability to apply its findings to other states or the national level. A larger



and more diverse sample would offer a broader understanding.

Additionally, although the study includes entrepreneurs from industries such as manufacturing, retail, and services, it does not capture the unique challenges faced by women in rural microbusinesses. Furthermore, while the study highlights the role of digital tools, it does not extensively explore existing government policies and programs that support women entrepreneurs.

## CONCLUSIONS

The analysis presents complete information about how women entrepreneurs overcome obstacles using their strategic business approaches and also discovers available prospects in Karnataka. Digital tools help promote business expansion, but these women entrepreneurs still face barriers because of their gender despite such opportunities. Despite their financial problems and cultural pressures and lack of proper guidance women entrepreneurs can find success by using digital tools while growing their businesses through networking opportunities. Supportive conditions for female entrepreneurs will increase women's economic strength and cultivate future economic growth in India.

## FUTURE SCOPE

This study validates that digital infrastructure has a strong potential to empower women entrepreneurs in Karnataka. Although digital technology enhances market access streamlines business processes, and reduces entry barriers, this study also identifies ongoing challenges like digital illiteracy, gendered constraints, and unequal access to resources. While trying to capitalize on the potential of digital infrastructure, future studies need to provide greater emphasis on different areas of highest priority. For a start, there is an urgent need for assessing and making digital literacy programs available and effective for women with varied backgrounds especially rural-based ones. They need to lay considerable emphasis on the skills applicable in real-world settings and incorporate specific needs of women-owned enterprises. Second, research in the future will have to study and address the gendered barriers that emerge in cyberspace, such as cyberbullying, discriminatory algorithms, and unequal access to funding and mentorship. Interventions such as mentorship programs networking forums, and policy on how to combat cyber gender violence must be undertaken to create cyberspace as an inclusive space. Third, it must study the effectiveness of women-enterprise development and digital economy inclusiveness support programs and policy interventions. Finally, longitudinal studies must be conducted to capture the long-term impacts of digital adoption on the business growth, resilience, and sustainability of women entrepreneurs, and the potential of leading-edge technologies such as AI and blockchain

to empower women further in the digital economy. By addressing these issues and carrying out these research options, we are able to create a more equitable and empowering environment for women entrepreneurs in Karnataka and elsewhere.

**Acknowledgements.** I express my gratitude to our founder Sadguru Sri Madhusudan Sai for blessing me with the opportunity to study at his university. I extend my regards and heartfelt gratitude to my professor, Yogeshbaba K, for providing me with guidance and valuable supervision throughout this endeavor. Without his support, I would not have been able to complete this work. I offer my sincere thanks to Dr. Anandan and the entire faculty of the Economics department for their invaluable guidance and support. I also want to express my heartfelt love and utmost respect and convey my love and gratitude to my guardian, well-wishers, participants and friends for their unwavering support and encouragement throughout the completion of this work.

**Conflict of Interest.** None.

## REFERENCES

- Alshaar, A. M. K. (2023). Exploring the Digital Landscape: Opportunities, Challenges, and Strategies in Digital Entrepreneurship. *International Journal of Entrepreneurship*, 27(4), 1–14.
- Appaya & Abbas (2024). Empowering women through digital financial inclusion. *World Bank Blogs*.
- Aziz (2024). Women's Double Burden in the Family Between Culture and Discrimination. *Potret Pemikiran*.
- Bandura, R. & McLean, M. (2024). Leveraging Digital Technologies to Advance Women's Economic Empowerment. *CSIS*.
- Barnhard & Olsson (2020). Keeping up the pace of digitalization in small businesses—Women entrepreneurs' knowledge and use of social media". *International Journal on Entrepreneurial Behaviour and Research*.
- Choudhury, N. (2009). The Question of Empowerment: Women's Perspective on Their Internet Use. *Gender, Technology and Development*.
- Cooke, & Xiao (2020). Women entrepreneurship in China: Where are we now and where are we heading. *Human Resource Development International*, 24, 1–18.
- Davaki, D. K. (2018). The underlying causes of the digital gender gap and possible solutions for enhanced digital inclusion of women and girls. *European Union*.
- Debbarma, A. & Chinnadurai, A. S. (2023). Empowering Women through Digital Literacy and Access to ICT in Tripura. *International Research Journal of Advanced Engineering and Science*, 9(1).
- Denis O'Hearn (2009). Amartya Sen's Development as Freedom: Ten Years Later. *A Development Education Review*, Vol. 8, Spring, pp. 9-15.
- Dy, A. M., Marlow, S. & Martin, L. (2017). A Web of opportunity or the same old story? Women digital entrepreneurs and intersectionality theory. *Human relations*, 70(3), 286-311.
- Ghauri, P., Fu, X. & Minayora, A. (2022). Digital technology-based entrepreneurial pursuit of the marginalised communities. *Journal of International Management*, 28(2), 100948.



- Gillwald, A. & Partridge, A. (2022). Gendered Nature of Digital Inequality: Evidence for policy considerations. *UN Women CSW*.
- Golzard. (2019). Economic empowerment of Iranian women through the internet. *Gender in Management An International Journal*.
- Hartmann, H. I. (1979). The Unhappy Marriage of Marxism and Feminism: Towards a more Progressive Union. *Capital & Class*, 3(2), 1–33.
- Hasan, Ashfaq, Parveen & Gunardi. (2022). Financial inclusion – does digital financial literacy matter for women entrepreneurs? *International Journal of Social Economics*.
- Huang, Y., Zhang, J., Xu, Y., Yuan, Y., Zhang, M. & Huang, L. (2025). Digital entrepreneurial ecosystem and female entrepreneurial activity. *Humanities and Social Sciences Communications*, 12(1), 1–13.
- Isaac (2014). Expanding Women's Access to Financial Services. *World Bank*.
- Jalan & Gupta (2019). Enabling Technology for Women Entrepreneurship: A Study. *GFJMR*.
- Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change*, 30(3), 435–464.
- Kandt (2022). Glorifying multi-tasking by women entrepreneurs must stop—CARE. *Care*.
- Kulaksiz & Rafi. (2021). How women entrepreneurs can be empowered to shape the digital future. *World Bank Blogs*.
- Kumar & Muthamma (2023). Karnataka's Rural and Urban Women Entrepreneurship. *Journal of Informatics Education and Research*, 3(2).
- Luo, Y. & Chan, R. C. K. (2021). Gendered digital entrepreneurship in gendered coworking spaces: Evidence from Shenzhen, China. *Elsevier*, 119, 103411.
- Lyons, E. & Zhang, L. (2023). *Female Entrepreneurs, Digital Tools, and Work-Life Balance: Evidence from Small Businesses around the World*.
- Majumdar, R. & Mittal, A. (2025). Revisiting the financial challenges faced by women-led microenterprises: Some evidence from the Indian manufacturing sector. *IIMT Journal of Management*, 2(1), 64–83.
- McAdam, M., Crowley, C. & Harrison, R. T. (2019). "To boldly go where no [man] has gone before"—institutional voids and the development of women's digital entrepreneurship. *Technological Forecasting and Social Change*, 146, 912-922.
- Mishra. (2023). Online Shopping Dynamics Influencing Customer: Amazon Vs. Alibaba. *Asia-Pacific Journal of Management Research and Innovation*, 18(3–4).
- Nur Asrofi, D. A., Pratomo, D. S. & Pangestuty, F. W. (2023). Internet utilization and Indonesian female entrepreneurs during the COVID-19 pandemic. *Cogent Social Sciences*, 9(2), 2273347.
- Narayani, A. (2024). Women's Safety in Digital Space. *Indian Journal of Public Administration*, 70(3), 546–561.
- Radhicka Kapoor (2024). Leveraging digital technologies to foster growth oriented women entrepreneurs in India. *UNDP*.
- Salamzadeh, A., Dana, L. P., Ghaffari Feyzabadi, J., Hadizadeh, M. & Eslahi Fatmesari, H. (2024). Digital Technology as a Disentangling Force for Women Entrepreneurs. *World*, 5(2).
- Shamika & Ratnakar (2023). How to unlock women's potential in the digital economy. *World Economic Forum*.
- Shao, K., Ma, R., Zhao, L., Wang, K. & Kamber, J. (2022). Did the cyberspace foster the entrepreneurship of women with children in rural China? *Frontiers in Psychology*, 13, 1039108.
- Singh, A. & Singh, V. V. (2024). Role of Social Media In Empowering Women Entrepreneurs In India. *Global Media Journal*, 22(69), 1–5.
- Soluk, J., Kammerlander, N. & Darwin, S. (2021). Digital entrepreneurship in developing countries: The role of institutional voids. *Technological Forecasting and Social Change*, 170, 120876.
- Sowmya, B. & Pai, R. (2025). Digital Inclusion of Women Entrepreneurs in The Unorganized Sector – A Systematic Review. *Advances in Consumer Research*, 2, 71–85.
- Thakkar (2024). *Empowering Women Entrepreneurs: The Role of Technology in Empowering Women Entrepreneurs*.
- Torres, J., Maduko, F., Gaddis, I., Iacovone, L. & Beegle, K. (2021). The Impact of the COVID-19 Pandemic on Women-Led Businesses. *Policy Research Working Paper*.
- Trisha Chandra (2023). Women's workforce participation in India. *IWWAGE*.
- UNCTAD's eTrade for Women Advocates. (2022). *Fostering Women Entrepreneurship in the Digital Economy*.
- Wiig, H., Schou, P. K. & Hansen, B. (2024). Scaling the great wall: how women entrepreneurs in China overcome cultural barriers through digital affordances. *Entrepreneurship & Regional Development*, 36(3–4), 294-311.
- Zhao, Z., Hönigsberg, S. & Mandviwalla, M. (2025). Digital driven success: The digitalization effect on SME performance. *Information Technology for Development*.

**How to cite this article:** Sai Harshita Dewangan and K. Yogeshbaba (2025). Digital Infrastructure as a Catalyst for Women Entrepreneurship: A Qualitative Study from Karnataka. *International Journal on Emerging Technologies*, 16(2): 42–50.