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SOCIO-CULTURAL AND INSTITUTIONAL BARRIERS TO ICT INTEGRATION A MULTI-LAYERED ANALYSIS OF WOMEN'S ENTREPRENEURIAL DEVELOPMENT IN PAKISTAN

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Abstract
The study investigates the challenges and influences of socio-cultural and institutional obstacles that affect the adoption of Information and Communication Technology (ICT) among female entrepreneurs in Pakistan and their growth as entrepreneurs. Using a survey that included 400 women entrepreneurs from six cities in Pakistan, the research applies Structural Equation Modeling to assess how restrictive gender norms, low digital literacy, childcare responsibilities, lack of government support, and financial obstacles impede ICT adoption by women entrepreneurs. According to the findings, socio-cultural barriers (β = -0.42), institutional barriers (β = -0.35), and low digital literacy (β = -0.45) all strongly impact the adoption of ICTs. Still, ICT is found to have a positive effect on expanding in the market (β = 0.32), financial performance (β = 0.28), and innovation capability (β = 0.30). Digital social capital (β = 0.28) and digital confidence (β = 0.25) play a role in shaping the relationship between ICT adoption and business performance by helping women make use of online support and their own confidence when facing problems. The research adds gender-specific elements to the Technology-Organization-Environment framework, the Technology Acceptance Model, and Institutional Theory.

INTRODUCTION

Information and Communication Technology (ICT) has become a key factor that helps entrepreneurial development, mainly for women in countries like Pakistan, where it is difficult for them to take part in the economy. Women entrepreneurs are helped by ICT tools like e-commerce, social media, and mobile applications, which give them more access to the market, lower costs of transactions, and encourage innovation, so they can deal with socio-cultural and institutional constraints (Wellalage et al., 2021). Digital technology gives Pakistani women a new chance by helping them expand their businesses and improve how they work, given the constraints of local social and business systems (Wang, 2021). E-commerce systems remove mobility barriers for women and help them connect with other markets worldwide, making them more competitive and financially included (Wellalage et al., 2021).

However, women entrepreneurs in Pakistan experience a series of socio-cultural and institutional barriers to ICT integration, such as restrictive gender norms, low digital literacy, and poor access to financial and infrastructural resources (Wale et al., 2021). These barriers perpetuate a digital gender gap, limiting the scalability and sustainability of women-led businesses. These barriers help create a gender divide

in the digital sphere, which prevents women-led businesses from growing and lasting. While many global studies mention ICT's support for entrepreneurship, little is known about the socio-cultural and institutional impediments experienced by women in business. Many writings in the field usually ignore the distinct issues that women face in patriarchal societies (Uher et al., 2022). The purpose of this study is to explore ways that socio-cultural and institutional factors limit ICT adoption and assess how these impact women's entrepreneurial activities and company outcomes in Pakistan.

1.1 Research Objectives

- ✓ To analyze socio-cultural and institutional barriers to ICT integration among women entrepreneurs in Pakistan.
- ✓ To examine the impact of these barriers on business performance, including market expansion, financial performance, and innovation capability.
- ✓ To investigate the mediating roles of digital social capital and digital confidence in mitigating barriers to ICT adoption.

1.2 Research Questions

- ✓ What socio-cultural and institutional factors hinder ICT adoption among women entrepreneurs in Pakistan?
- ✓ How do these barriers influence business performance in terms of market expansion, financial performance, and innovation?
- ✓ What role do digital social capital and digital confidence play in mitigating these barriers?

1.3 Significance of the Study

This study is valued by policymakers, practitioners, and academics eager to develop inclusive entrepreneurship in less developed countries. Awareness of specific socio-cultural and institutional barriers to ICT adoption enables the research to provide further hints for developing gender-sensitive initiatives in the form of digital literacy programs and financial inclusion opportunities. The research results suggest that using digital social capital can improve learning and expand a business in the online world for entrepreneurs. Intellectually, the research provides gender-specific models that merge socio-cultural and institutional views, providing ways to solve the limitations of gender-neutral frameworks. Besides this, applying techniques like Structural Equation Modeling and outlier approaches delivers solid data regarding how various challenges affect business outcomes.

1- Literature Review

2.1 Women's Entrepreneurship in Pakistan: A Contextual Overview

Women's efforts in starting businesses in Pakistan must deal with socio-cultural and traditional rules, heavy family care, and very few resources provided by institutions. Said and colleagues (2022) point out that women's limited freedom to move, access resources, and make decisions under a patriarchal system often means they can only run businesses from their homes. The main reason behind this is that social standards keep women from being active in public economic areas, so they are usually prompted to work in areas close to home. According to Semkunde et al. (2022), since caring for children is expected in their culture, many women are unable to engage in entrepreneurship due to their family responsibilities. Looking after a house is often a major responsibility for Pakistani women, taking away valuable hours for building their businesses.

There is not enough institutional backing for women entrepreneurs, which makes these problems worse. Shaikh et al., (2021) explain that having limited money and policies that ignore gender issues make it hard for women to grow their businesses, since they are frequently required to provide collateral. Thaher et al. (2021) explain that unfair lending creates additional problems for women because they often cannot acquire the money they need to grow their businesses. Nevertheless, digital platforms have made transformation happen in many ways. Salamzadeh et al. (2024) find that women can now take part in market activities and reach customers without moving outside their homes because of e-commerce and social media. Tubastuvi and Purwidianti, (2023) explain that these services promote financial inclusion by giving women access to digital money and markets, which encourages their businesses to grow further. Shahbaz et al. (2023) point out that because of digital tools, women can network virtually and gather

essential information, making up for the challenges of building physical networks. Nonetheless, according to Sardar et al., slow adoption remains an issue since there are socio-cultural norms and institutional gaps, such as frequent technical disruptions in internet access. Because of this, it is important to understand what prevents women in Pakistan from using ICT integration for entrepreneurial activities.

2.2 Theoretical Frameworks

The study makes use of four theories: Resource-Based View, Social Capital Theory, Institutional Theory, and Gender Role Theory to understand ICT adoption among women entrepreneurs in Pakistan. According to Shiralkar et al. (2021), the Resource-Based View (RBV) holds that using ICT improves both the effectiveness of internal activities and a company's visibility in the market. Tubastuvi and Purwidianti (2023) explain that, for women entrepreneurs, e-commerce platforms make it possible to deal successfully with resource challenges and continue to grow their businesses. Socio-cultural and institutional factors filter who can use these resources, requiring a unique look at each context.

Salamzadeh et al. (2022) indicate that Social Capital Theory shows that digital social capital can overcome the challenges that entrepreneurs face. They believe digital platforms form networks on the web, supplying women with information, guidance, and jobs that have often been out of reach for women not connected to male-dominated ones. Simons et al. (2023) also explain that having social capital online supports women in growing their ability to succeed and stand up to challenges in their communities. Shaikh et al. (2021) suggest that Institutional Theory investigates the role of both formal and informal rules in deciding ICT adoption. They find that both policies and outdated infrastructure, as well as patriarchal traditions, are large obstacles preventing many women from using technology. Thapa Karki et al. (2021) illustrate that Gender Role Theory highlights how cultural expectations that limit women's activity beyond the home help cause the bigger digital divide between the sexes. Together, these theories make it possible to examine the many challenges to ICT adoption and their effects on women's entrepreneurial experiences here in Pakistan.

2.3 Socio-Cultural and Institutional Barriers to ICT Adoption

The presence of socio-cultural and institutional barriers tends to stop ICT adoption among Pakistani women entrepreneurs and decrease their chances of being successful. Salahuddin (2024) suggests that socio-cultural barriers, such as restrictive gender norms, prevent women from using technology since their care and housework are more important than business. Because of this cultural pressure, women don't feel as confident and take less time to learn how to use computers. Tumba et al. (2022) point out that having low digital literacy worsens this problem since many women lack the skills needed to use technology successfully. According to Semkunde et al. (2022), having to manage childcare responsibilities means that women commonly spend less time on digital literacy and entrepreneurial activities.

According to Sardar et al. (2021), the lack of gender-friendly policies is one example of institutional barriers slowing women's chances to obtain important resources such as the internet or training in digital fields. Shaikh et al. (2021) highlight that many women are unable to get the funds they need because they encounter lots of red tape and inequality when trying to use digital payment systems or apply for loans. Sindakis and Showkat (2024) found that when rural areas lack proper technology and internet connection, usual disruptions and outages also stop digital services from being effective. It is important to understand how the challenges are connected to create interventions that help women entrepreneurs effectively use ICT for the sustainable growth of their businesses.

3- Conceptual Framework and Hypotheses

3.1 Conceptual Model

The study proposes a multi-layered model to better understand why women entrepreneurs in Bahadurpur, Pakistan, don't use Information and Communication Technology (ICT), incorporating several socio-cultural, institutional, and individual-level factors. There are four theoretical structures incorporated into the model: the Technology Organization Environment (TOE) framework, the Technology Acceptance Model (TAM), Resource-Based theory (RBV), and Institutional Theory. This enables the TOE framework to provide a better overall

impression of ICT adoption by way of analysis of technology (digital infrastructure of different societies), organizational issues (rules of different societies), and environment (Shiralkar et al., 2021). In TAM, users' feelings on how useful or easy to use they find technology is the focus, and this is especially important for women negotiating socio-cultural (Tubastuvi & Purwidianti, 2023). According to RBV, ICT enhances a company's market advantage and operating efficiencies (Shiralkar et al., 2021). Institutional Theory suggests that technology adoption is contingent not only on policies but also on informal norms like Patriarchal traditions.

The model includes socio-cultural barriers (e.g., restrictive gender norms, childcare responsibilities), institutional barriers (e.g., limited government support, financial access), and individual-level factors (e.g., digital literacy) as key determinants of ICT adoption. Digital social capital and digital confidence are two mediating constructs that bridge ICT adoption and business performance. Online networks digital social capital) provide women with access to the knowledge, mentorship, and market opportunities that women can utilize to offset the resource constraints (Salamzadeh et al., 2022). Digital confidence is their feeling of self-efficacy to utilize available ICT tools and instruments, which in turn enable them to apply ICTs in order to amplify business growth. This model depicts the relationships among these barriers, ICT adoption, and business performance outcomes, including market expansion, financial performance, and innovation capability. These elements are subsequently integrated in order to provide a holistic Daleth to analyze the complicated dynamics around ICT adoption in the patriarchal context of Pakistan.

3.2 Hypotheses Development

According to the conceptual model, this study suggests five hypotheses that investigate the relationships among socio-cultural and institutional barriers, ICT adoption, and business performance among women entrepreneurs in Pakistan.

H1: Socio-cultural barriers, such as restrictive gender norms and childcare responsibilities, negatively affect ICT adoption.

H2: Institutional barriers, such as limited government support and financial access, negatively affect ICT integration.

H3: Digital social capital mediates the relationship between ICT adoption and business performance.

H4: Digital confidence mediates the relationship between ICT adoption and business outcomes.

H5: ICT adoption positively impacts market expansion, financial performance, and innovation capability.

4- Methodology

4.1 Research Design

The study used a quantitative, positivist research design to understand the socio-cultural and institutional barriers to ICT adoption and how they impact the business performance of women entrepreneurs in Pakistan. This approach is successful in investigating relationships between barriers to ICT adoption and entrepreneurial results using analytical and statistical data. The study could look at relationships between digital social capital, digital confidence, and business performance markers (market expansion, financial performance, and innovation capability).

The main reason for choosing Structural Equation Modeling (SEM) was to test complex relationships such as direct and mediating ones within the several levels of the conceptual model. Because SEM can study several factors at once, it is well suited for exploring the relationship between socio-cultural and institutional barriers, ICT adoption, and what happens to a business as a result. At the beginning of the SEM analysis, EFA was applied to find the underlying factors and check that the survey questions truly represent the constructs. SEM and EFA together help validate the research constructs and model the detailed relationships, making the results about ICT adoption in Pakistani entrepreneurship more reliable.

4.2 Data Collection

Data were collected by sending a self-administered questionnaire to women entrepreneurs in Lahore, Faisalabad, Peshawar, Mardan, Karachi, and Hyderabad. The researchers decided on these cities because of their strong economies and mixed entrepreneurial environments to make sure the sample covers many types of urban women

entrepreneurs. People running small or medium-sized enterprises, as well as home-based businesses, were chosen using purposive sampling. The data came from 400 women entrepreneurs who were selected according to how much data the analysis required.

The questionnaire was created to assess several aspects, such as socio-cultural barriers, including gender norms and childcare responsibilities, institutional barriers (covering government provision and financial support), ICT adoption, digital social capital, digital confidence, and business outcomes. Existing literature was used to make sure that the measurement scales we picked were suitable. For instance, digital tools such as e-commerce platforms and social media platforms were used to check ICT adoption, while business performance was evaluated using changes in market expansion, financial performance, and innovation capability. All of the hypothetical situations were rated by respondents on a 5-point scale (1 for strongly disagree and 5 for strongly agree). The majority of subjects in this study were aged between 25 and 45 and had either a high school, college, or university education, as well as 1–10 years in their chosen business. Most of these women worked in micro or small projects, mainly found in retail, service, and handicraft businesses, as is common for women entrepreneurs in Pakistan.

4.3 Data Analysis

For the analysis, descriptive statistics, Exploratory Factor Analysis (EFA), and Structural Equation Modeling (SEM) were performed using AMOS software, version 24. The study results are shown by the use of descriptive statistics to summarize who the respondents were and to offer a first look at how many participants reported on different topics, including socio-cultural barriers and ICT adoption. EFA helped confirm that the measurement model included the correct factors and assigned survey items to their correct constructs. Factors with eigenvalues higher than one were kept after applying principal component analysis with a varimax rotation, approving the construct structure.

The researchers tested the relationship between socio-cultural and institutional obstacles, ICT adoption, and the impact of digital social capital and digital confidence on business results through SEM. The research depended on Chi-square, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) to measure how well the models fit the data. Steps were taken to make sure no data was missing, outliers were dealt with, the quality of percentages was checked, and common issues related to having similar methods for the variables were avoided. Approximately 5% of the missing data were replaced using the mean. Noted the outliers based on Mahalanobis distance and deleted them if they deviated from the rest of the dataset. To check normality, the data were tested using skewness and kurtosis, finding that the data met the basic requirements for the SEM model. Common factor variance was studied with Harman's single-factor test, confirming that there is no significant bias. To ensure suitability, Cronbach's alpha was used to measure reliability, while convergent validity was tested using AVE ≥ 0.5 and discriminant validity by comparing the square root of AVE with inter-construct correlations.

5- Findings and Analysis

5.1 Descriptive Insights

The study provides insights into the demographics and ICT adoption patterns of 400 women entrepreneurs across six Pakistani cities: Lahore, Faisalabad, Peshawar, Mardan, Karachi, and Hyderabad. The sample predominantly comprised women aged 25–45 years (68%), with 52% holding high school diplomas and 38% possessing university degrees. Most participants operated micro or small enterprises (85%), primarily in retail (40%), services (30%), and handicrafts (20%), with business experience ranging from 1–10 years (75%). ICT adoption was moderate, with 55% using e-commerce platforms and 65% engaging with social media for business purposes, though only 30% reported advanced digital skills.

Table 1: Demographic and ICT Adoption Summary

Characteristic	Percentage (%)
Age	
25–35 years	40%

36–45 years	28%
Education	
High School	52%
University Degree	38%
Business Type	
Retail	40%
Services	30%
Handicrafts	20%
ICT Adoption	
E-commerce Platforms	55%
Social Media Usage	65%
Advanced Digital Skills	30%

Prevalent barriers included low digital literacy, restrictive gender norms, and limited institutional support. Only 35% of respondents reported proficiency in digital tools, highlighting a significant skill gap. Gender norms, such as expectations to prioritize domestic roles, restricted 60% of participants' time for digital engagement, while 70% cited childcare responsibilities as a constraint. Institutionally, 65% reported inadequate government support, such as lack of digital training programs, and 50% faced challenges accessing finance for technology investments.

5.2 Impact of Barriers on ICT Adoption

Socio-cultural and institutional barriers significantly impede ICT adoption among women entrepreneurs. Socio-cultural factors, including restrictive gender norms and childcare responsibilities, negatively influence technology engagement. Gender norms that emphasize domestic roles reduce women's opportunities to adopt digital tools, with 62% of respondents reporting societal pressure limiting their business activities. Childcare responsibilities further constrain time, with 68% of participants indicating that family obligations restrict digital skill acquisition. Low digital literacy emerged as a critical barrier, with only 35% of women proficient in using e-commerce or social media platforms, significantly limiting their ability to leverage ICT for business growth.

There are institutional barriers, namely limited government support and financial access, which also limit ICT adoption. 65% of respondents were affected by the lack of gender sensitive gender policies in place, which have not provided subsidized digital training, and 55% complained about the unreliability of internet infrastructure in smaller cities like Mardan and Hyderabad. Financial constraints, such as accessing technology loans or otherwise securing small loans to invest in technology, were impacting 50% of participants, exacerbating the digital divide. These findings are summarized in Table 2, which presents standardized path coefficients from Structural Equation Modeling (SEM) analysis, showing that the barriers of ICT adoption are negative.

Table 2: Impact of Barriers on ICT Adoption (SEM Results)

Barrier	Path Coefficient	p-value
Socio-Cultural Barriers (Gender Norms)	-0.42	<0.01
Socio-Cultural Barriers (Childcare)	-0.38	<0.01
Low Digital Literacy	-0.45	<0.001
Institutional Barriers (Gov. Support)	-0.35	<0.05
Institutional Barriers (Finance)	-0.30	<0.05

Low digital literacy was the most noteworthy barrier and significantly affected ICT adoption, with the nhất negative effect (β = -0.45, p < 0.001), highlighting the importance of skill development programs targeting low digital literacy.

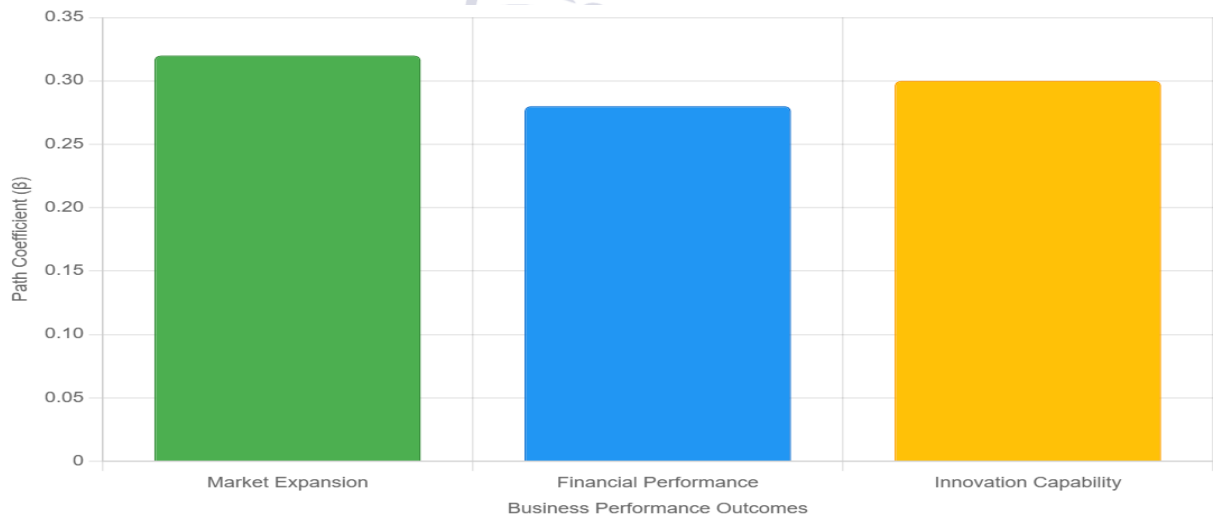
5.3 Mediating Roles of Digital Social Capital and Confidence

Digital social capital and digital confidence act as significant mediating variables between ICT adoption and business performance. Digital social capital accessed through online networks provides the market information, mentorship, and customer base avenues to optimize the use of ICT. The SEM results reveal that digital social capital partially mediates the relationship between ICT adoption and business performance (β = 0.28, p < 0.01). 58.2% of the respondents affirmed that their market reach had improved since joining online communities. They also function as a compensation for limited physical networking possibilities, improved with entrepreneurial resilience.

This relationship is also mediated by Digital confidence, representing women's own efficacy using ICT (β = 0.25, p < 0.01). Among the respondents, 40% revealed that women with higher confidence in digital tools were more likely to adopt ICT with greater business outcomes. For example, confident users used e-commerce platforms to broaden their customer base, as 45% recorded increased sales. The link between ICT adoption and performance is strengthened by both mediators, who show their ability to mitigate socio-cultural and institutional constraints in the adoption and usage of ICTs.

5.4 Business Performance Outcomes

The barriers toward ICT adoption notwithstanding, ICT adoption is positively associated with business performance in terms of market expansion, financial performance, and innovation capability. SEM analysis shows strong positive relationships: ICT adoption promotes market expansion (β = 0.32, p < 0.01), financial performance(β = 0.28, p < 0.01), and innovation capability (β = 0.30, p < 0.01). Some 50% of respondents reported increased customer reach using digital platforms, and 40% reported increased revenues through online sales. 35% of participants reported beginning innovation, such as new product offerings, through social media.



6- Discussion

Findings show that the adoption of women entrepreneurs in Pakistan, through the adoption of Information and Communication Technology (ICT), faces many socio-cultural and institutional barriers consistent with previous research. Women face socio–cultural barriers: restrictive gender norms and childcare responsibilities constrain women's time and opportunities for digital engagement: 62% find they are pressured by their communities to focus on domestic work (Salahuddin, 2024). These results are consistent with research that has revealed how

patriarchal norms constrain women's entrepreneurial activities in developing contexts (Semkunde et al., 2022). Through low digital literacy (reported by 65% of participants), the study aligns with existing studies that identify skill gaps as a major barrier to technology adoption (Tumba, Tibbs, & Griffiths, 2022). Limited government support and lack of financial access, affecting 65 % and 50 % of respondents respectively, that plunge investments in digital tools reflect evidence of poor policy support in Pakistan (Shaikh et al., 2021; Sardar et al., 2021).

The study offers new insights by showing that digital social capital and digital confidence lessen the impact of the challenges discussed. Access to information and advice through digital social capital supports 58% of respondents in improving their businesses by boosting their ICT adoption, finds a recent study (Salamzadeh et al., 2022). This agrees with findings showing that digital networks add resilience to businesses (Simons et al., 2023). In the same way, 40% of participants said strong digital confidence helps women use ICT better, allowing them to boost both their market reach and innovation (Tubastuvi & Purwidianti, 2023). These mediators help us understand the ways women entrepreneurs manage the challenges brought by sociocultural barriers and institutional structures, in terms of ICT adoption in traditional settings (Salamzadeh et al., 2024). Despite obstacles, using ICT offers positive benefits to a company's growth (market expansion: 0.32), earnings (financial performance: 0.28), and innovations (innovation capability: 0.30), showing its valuable effect.

6.1 Theoretical Contributions

The findings expand theories such as TOE, TAM, and Institutional Theory by taking into account gender and regional influences on Pakistani women entrepreneurs. The model is developed by emphasizing factors like gender and differences in policy (which are sociocultural and institutional) as essential reasons behind the adoption of ICT, along with technology and organizational aspects (Shaikh et al., 2021). The model of TAM becomes more comprehensive by introducing digital confidence as a main factor in determining how easy and useful using technology is, which also helps deal with gender-related hurdles like low self-efficacy (Tubastuvi & Purwidianti, 2023). The authors suggest that, according to Institutional Theory, informal beliefs like patriarchy, in combination with official limits like limited finances, influence organizations' adoption of technology (Sardar et al., 2021).

The idea of combining digital social capital and digital confidence with ICT adoption models is a valuable development. The results support Social Capital Theory by illustrating that the effect of ICT adoption on business performance is determined by the role of online networks and self-efficacy (Salamzadeh et al., 2022; Simons et al., 2023). The extensions consider gender when studying ICT adoption, as previous gender-neutral models often struggled in traditional societies.

6.2 Practical Implications

Policy and business strategies are adjusted based on the findings about ICT adoption among women entrepreneurs in Pakistan. It is important for policymakers to concentrate on digital literacy classes designed for women, to help overcome the 65% skill deficiency observed in the study. Workshops organized by communities and supported by associations between the public and private sectors can raise people's digital skills and confidence (Tumba et al., 2022). Helpful programs for women, such as smaller requirements for assets when borrowing money, are necessary to make digital tools available to 50% of people facing financial barriers (Shaikh et al., 2021). Using online tools in mentorship programs can boost women's digital social capital and allow them to participate in networks for learning and access to opportunities in the marketplace.

Many women entrepreneurs depend on approaching platforms like e-commerce and social media to attract additional customers, as 50% of those studied by Salamzadeh et al. (2024) recorded growth in the market. Digital confidence formed by exchanging experiences and accessing online tutorials can make it possible for people to work more effectively and bring about exciting changes in business. Implementing these strategies makes it easier for women to face socio-cultural and institutional barriers, which promotes lasting growth in Pakistan's digital businesses.

6.3 Conclusion and Recommendations

This analysis demonstrates that socio-cultural and institutional barriers are preventing women entrepreneurs in Pakistan from using ICT, making it difficult for them to improve their business. Gender expectations and responsibilities for childcare make it difficult for many (62%) restrictive gender norms and (68%) childcare responsibilities women to become digitally engaged (Salahuddin, 2024; Semkunde et al., 2022). According to the findings, almost two-thirds of people report that low digital literacy is the greatest challenge in using e-commerce and social media sites (Tumba et al., 2022). Lack of sufficient funds or government support, as well as issues with getting credit (65% and 50%), obstruct digital tool investments and increase the digital divide. In spite of these difficulties, ICT adoption makes a significant difference in market expansion ($\beta = 0.32$), financial performance ($\beta = 0.28$), and innovation capability ($\beta = 0.30$), demonstrating it has the power to change things (Salamzadeh et al., 2024). The mediator role of digital social capital ($\beta = 0.28$) and digital confidence ($\beta = 0.25$) helps women to connect to online networks, increase their self-belief, and therefore achieve better business results from the use of ICTs (Salamzadeh et al., 2022; Tubastuvi & Purwidianti, 2023).

6.4 Policy and Practical Recommendations

For these difficulties to be solved, targeted policy strategies are necessary. Ensuring community digital training is offered will help close the 65% digital literacy gap, as workshops should be made accessible to women by fitting their schedules. Skill development programs can team up with private organizations to ensure people pay less for digital products and learn better e-commerce and social media skills (Tumba et al., 2022). Mobile banking and platforms providing microfinance with lower requirements for collateral have helped around 50% of respondents to overcome financial problems. They make it easier for people to use financial technology and help more people be part of the financial system (Shaikh et al., 2021). Regulations focused on gender equity should require more funding for internet and digital training, as 65% of respondents in the study highlighted these areas as gaps (Sardar et al., 2021).

The private sector should focus on creating mentorship schemes that use online methods to support digital social capital. Because of these initiatives, women entrepreneurs are more likely to connect with experienced mentors and other business owners, helping them expand in the market and exchange ideas, as revealed in 58% of respondents using online networks (Salamzadeh et al., 2022). Including women in digital supply chains by supporting their businesses can help raise scalability and innovation in the sector (Salamzadeh et al., 2024). Women who start businesses can benefit greatly from being involved on social media and learning with their peers, which increases their digital confidence and improves their ability to compete (Tubastuvi & Purwidianti, 2023). They all work to help women address obstacles and find success in Pakistan's digital economy.

6.5 Limitations and Future Research

The results come from participants giving their opinions, so some response bias may happen, and the study does not track information over time. Since Pakistan is unique in many ways, its results usually cannot be applied broadly to other locations. It would be useful for future studies to conduct research over an extended period to track how obstacles and ICT adoption change in time. It is possible to compare South Asian countries to identify what works differently in each region.

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