



Online market for women in Pakistan: assessing the level contribution influenced by information and communication technologies

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Abstract

The objective of this investigation is to examine the influence of information and communication technologies (ICT), on women's engagement in the online market of Pakistan, both preceding and following the COVID-19 pandemic. Data were sourced from comprehensive semi-structured interviews with participants, a survey involving 346 women, and supplementary data obtained from the National Bureau of Statistics of Pakistan. Descriptive statistical analysis for the period 2017-2022 among men and women in employment patterns, and unemployment. This approach helps unveil factors influencing the sex ratio, with abnormal gender ratios potentially reflecting socio-economic factors, such as the tendency of women to be more active than men. Methodological comprising two sequential stages of scrutiny: an evaluation of ICT development concerning gender dynamics from 2017 to 2022 and a quantitative assessment of the market landscape and its developmental trajectory in the online realm in Pakistan. The most frequented online marketplace among women is Daraz.pk, Facebook, Cybermart.pk, Symbios.pk, and Aliexpress. The findings of the study reveal the discernible impact of the COVID-19 pandemic on the volume and structure of online purchases and sales, with a notable uptick. Potential applications in fostering women's entrepreneurship are extended by this research.

Keywords: gender, gender economy, digitization, ICT, online market.

Introduction

The COVID-19 pandemic and massive border closures have hurt many countries, including Pakistan. As a result, there was an urgent need to use digital technologies. Obviously, to succeed in the digital sphere, the digital divide becomes an important concept. However, advances in digital technology should not be taken for granted and their application is subject to variation depending on different circumstances. This fact has been proven by a significant number of works and reports of international organizations (including the International Labor Organization, OECD, UN, and World Bank) (Jamil, 2023; Kiara, 2023). The OECD estimates that there are 250 million fewer women than men actively using digital technologies (OECD, 2018; ITU, 2016). At the same time, in Pakistan, Muslim traditions, within which the role of a woman was reduced to that of a housewife (Tazeen et al., 2011). Moreover, according to our research, Pakistani women face a higher vulnerability compared to men, primarily due to their overrepresentation in various sectors (Ali et al., 2021; Sarwar A and Imran MK, 2019). To approach the solution of the problem, and challenges, it is necessary to promote women's empowerment, digital literacy, and digital skills development (Aleena Khan, 2021). Increased involvement of women in shaping the digital economy's progress will result in sustainable economic growth (United Nations Development Programme, 2021). This approach can optimize benefits by providing adaptable working conditions and diverse sources of income (United Nations Development Programme, 2021). Increasing women's participation in STEM (Science, Technology, Engineering, and Mathematics) and high-tech sectors will also help reduce the gender gap (Global Gender Gap Report, 2023).

In numerous developing nations, women are disproportionately found in low-income and slow-growing sectors, grappling with a range of barriers and discriminatory practices (Seema, 2015). These challenges involve restricted entry to vocational training, the pressure of balancing family responsibilities with business pursuits, limited access to Information and Communication Technology (ICT), market constraints, inadequate funding for women-led businesses, and cultural barriers, among others (House et al., 2004; Rizvi, et al., 2023). In addition, low levels of skills, knowledge, and awareness very often limit women's activities. Some studies are devoted to the study of the digital environment, digital tools, and online platforms (Ajumobi, 2017: 1). Other studies are aimed at learning digital skills and applying digital technologies, including social media and platform design (Afshan, 2021: 162; Behrendt, 2019). Engaging in online marketing offers various advantages, and for women, it can be viewed as an additional income source in certain roles (Blumberg, 2016: 153; Corvello, 2021). Other studies attribute discrimination to low levels of education and lack of skills, including ICT skills (Dettling, 2017; Durbin, 2020). Some sex-disaggregated statistics and gender indicators in ICT are missing in many cases (Kathleen et al., 2023; UNCTAD, 2014). There are very few scientific studies aimed at analyzing the level of women's participation in the information and communication sector before and after the COVID-19 pandemic (Eunrang et al., 2023; Dempere et al., 2023). Examining the involvement, accessibility, and advantages of women in the online market in Pakistan is a compelling area of study (Khan, et al., 2021; UN Women, 2023). According to a report by the United Nations Development Programme (UNDP), there has been a significant emphasis on digital trainings, tech education, and freelancing in the last several years especially during the pandemic, through initiatives from the government, private and development sectors. The report also states that internet users in Pakistan increased by 22 million (+35.9 percent) between 2021 and 2022. However, there is still a significant gender divide in terms of access to technology and the internet. While the technology and internet footprint has increased significantly, Pakistan's overall internet penetration is still below 40%. This divide is even bigger from the gender lens. There are households where men have mobile phones that women can use but not carry personally. There are limitations of access and use that limits them from accessing information and opportunities (UNDP, 2021). It's noteworthy that scientific research is rare on the factors influencing access, participation, and benefits for women in developing nations like Pakistan (Abbas et al., 2021; NCSW report 2023). The present study aims to fill this gap.

The study aims to evaluate how information and communication technologies (ICT) have influenced women's involvement in the online market of Pakistan, both pre- and post-COVID-19 pandemic. The literature review delves into a theoretical analysis of various perspectives on the evolution of gender studies in the digital landscape and the participation of women in the online market. The research methodology section offers methodological tools aimed at analyzing the level of ICT development, which is carried out according to an action algorithm consisting of two stages: assessment of the level of ICT development in a gender context for 2017-2022 (share of Internet users); quantitative assessment of the state and level of development of the online market in Pakistan.

This research aims to comprehensively investigate the dynamics of offline and online markets in Pakistan, with a specific focus on women's utilization and experiences. The study seeks to unravel the impact of the COVID-19 pandemic on the markets, exploring shifts in perception and behavior. Additionally, it delves into the intricacies of role adaptation in online markets concerning product choices, considering the influence of factors and the involvement of moral identity or rationalization processes.

The research will explore the driving factors behind women's participation in online markets, shedding light on the benefits accrued by Pakistani women through their engagement. A nuanced approach will be taken to discern any distinctions in thought or action based on marital status when involving women in online markets. Furthermore, the study investigates the evolving perceptions of offline and online markets post the COVID-19 pandemic. Ultimately, the primary contribution of this research lies in its detailed analysis of women's access, participation, and benefits in the online market landscape of Pakistan.

The research was designed to explore: How is the development of offline and online markets being observed in Pakistan? Which offline and online markets are utilized by women in Pakistan? What changes have been observed in the markets of Pakistan after the COVID-19 pandemic? Apart from this: How is the perception of role adaptation influenced by factors in online markets when it comes to product choice? To what extent are issues of moral identity or rationalization involved in such processes? What factors drive the participation of women in online markets? In terms of benefit orientation of research: What benefits are obtained by Pakistani women from their participation in online markets? Can there be a different thought or action when engaging women in online markets based on marital status? Has the perception of offline and online markets changed since the COVID-19 pandemic? The main contribution of this study is a detailed analysis of access, participation, and benefits of the online market for women in Pakistan.

Literature review

A huge number of scientific centers and research institutes are engaged in studying and analyzing problems caused by the expanding influence of information and communication technologies. Much attention is paid to the study of the formation

and development of digital inequality between different social classes and population groups. Women around the world face serious challenges, including economic, social, and financial ones, which limit or completely deny access to ICT and the Internet. Access to the Internet expands women's opportunities, contributes to the development of their social status increases in income, improves living conditions, and expands their role. It is especially worth emphasizing that the COVID-19 pandemic has significantly affected offline and online markets. As a result, most women were forced to switch to online work. During the pandemic, women's access to digital services may be limited, while at the same time, differentiation is increasing. In addition, many reports from international organizations note that the digitalization of the economy contributes to the reduction of poverty and gender inequality through the use of digital tools and technologies. Indeed, the digital environment brings forth several advantages, including the establishment of business networks, convenient access to knowledge and information, and the potential reduction of inequality (Sarma & Pais, 2008). Among the important digital tools, mobile phones and online platforms occupy an important place, where the benefits of mobile phones include time and cost savings. In turn, the use of home Internet is considered a positive factor for the development of the digital economy. The advantages of access to the Internet include reduction of various costs (for example, travel and childcare costs), provision of a wide range of services, the ability to quickly access, etc. Some researchers have found that despite routine work at home, married women are more active in the online market than in the offline market (Dettling, 2017: 451). However, women may experience difficulties due to a lack of sufficient level of education and, a low level of digital skills, but problems with access to the Internet at home are less important in terms of employment (Stefan, 2021). Stefan explains this trend (in low-wage industries) to the low level of education and lack of work experience in the relevant industry. Education stands out as a crucial factor in personal development, particularly the educational attainment of senior management, playing a pivotal role in shaping overall growth and success.

Due to the outbreak of the pandemic, digital skills are at the forefront of women's participation in the digital economy, as well as applications of digital technologies, which include social media, software, and digital tools (Guo et al., 2020: 1). One way to gain knowledge is by sharing knowledge through social networks between employees or family members. Whereas colleagues, friends, or family are seen as additional help in budget management, accounting, etc. Interestingly, the use of digital technology as a website interface and platform design can have a significant impact on business development (Huang et al., 2020: 431). Olsson & Bernhar (2021) in their research has revealed that the use of online platforms, electronic platforms, and networking are considered as the main sources of self-development. In turn, this affects women's participation in the ICT environment. Digital tools or technologies are described as tools that save time, costs, and money. In addition, social networks and online platforms are also used as tools for acquiring new knowledge, and digital skills and gaining new experiences (Corvello et al., 2021; Olsson & Bernhard, 2021: 278). The existing scenario in the labor market reflects a high demand for women's labor, necessitating a thorough examination of access, participation, and benefits in this domain. Gender stereotypes, however, pose significant obstacles for women striving for economic independence. Perceptions of women as mothers and wives have influenced stereotypes of traditional workplaces for women. This includes the education sector, medicine, and business aimed at solving social issues, as well as positions that do not require management skills (as a secretary, etc.).

The relevance of the topic raised in this study research on the topic is because in Pakistan the chosen topic has not yet been considered as separate. The gap identified in the provided literature review will be addressed by the current study, which is based on scientific research. According to a report by the United Nations Development Programme (UNDP), despite a significant increase in technology and internet footprint in Pakistan, the overall internet penetration is still below 40% (United Nations Development Programme, 2021). From a gender perspective, the divide is even more pronounced. In certain households, mobile phones are owned by men, allowing women to use them but not to carry them personally. Restrictions on access and usage impose limitations on women, hindering their ability to access information and opportunities (United Nations Development Programme, 2021). According to a study conducted by GSMA, strong growth rates in mobile internet awareness were observed in Pakistan, particularly among women. The gender gap in mobile internet awareness decreased from 16% to 11% (GSMA, 2021). In a separate study involving 215 women from various regions in Pakistan, it was discovered that 6 out of 10 women experience internet restrictions. The research, which included a survey and in-depth interviews, revealed that the majority of respondents are permitted to use the internet solely for attending online classes or communicating with family through WhatsApp (Pakistan Today, 2021; IFEX, 2021). The UNDP report also emphasizes the positive influence of digital tools on the lives of women in Pakistan. For example, women are undergoing training to initiate businesses, becoming exemplars of economic empowerment. They are actively contributing to the vision of creating a world where girls are accepted, empowered, and enabled to the same extent as boys in their respective areas (United Nations Development Programme, 2021).

Methodology

Combining qualitative and quantitative approaches in research, often referred to as mixed methods research, requires careful planning and integration. In the described research on ICT development and online market participation in Pakistan, a

sequential approach is used aim to capitalize on the strengths of both qualitative and quantitative methods, enhancing the overall rigor and depth of the research. The specific choice of strategy depends on the research questions, goals, and the desired level of integration between the two types of data in terms of ICT research (Sungsik Yoon, 2017). This study conducted one phase of the research first and then used the results to inform the subsequent phase. Begin with the quantitative phase, such as descriptive statistical analysis. Use these findings to inform the design of the semi-structured survey for women's participation in the online market (Sungsik Yoon, 2017).

The research was methodically undertaken, employing structural-functional and institutional approaches and utilizing an extensive array of both quantitative and qualitative methods for analysis and evaluation. Drawing insights from the literature review, a combination of quantitative and qualitative approaches, including a questionnaire, was employed. Specifically, to gauge the development of ICT and the online market in Pakistan, specialized economic research methods were applied, including statistical analysis and sociological surveys. This study proposes two approaches: (a) Descriptive statistical analysis for the period 2017-2022 among men and women in employment patterns, and unemployment. Analyzing the level of participation in wholesale and retail trade, along with statistical information, has become more feasible due to the increasing use of statistical methods. A comprehensive study of components like employment, unemployment, and inactivity in wholesale and retail trade, categorized by gender, age groups, and regions, is essential for a nuanced understanding of these indicators. Statistics play a crucial role in exploring issues like the division of labor within households and the balancing act between professional commitments and family responsibilities. This approach helps unveil factors influencing the sex ratio, with abnormal gender ratios potentially reflecting socio-economic factors, such as the tendency of women to be more active than men. Limitations of official statistics data are associated with the range of data, so differences between women and men on selected indicators were analyzed based on the collection and processing of data from statistical collections of Pakistan for 2017-2022. (b) Semi-structured survey of Pakistani women about their participation in the online market in Pakistan. Surveys were conducted in both online and offline formats. 240 were surveyed women, and 26 women took part in focus groups. Representativeness of the sample was ensured by age and region. All respondents are protected, and information about contact details and information received is stored with the researchers. The current study follows the methodology of online marketing research conducted by Xiayu et al., in 2023. Following Xiayu et al., in (2023) regarding online marketing for the woman through qualitative study; a purposive sampling strategy was used that provides in-depth understanding (Morse et al. 2002; Patton 2015). Two groups of respondents were selected on a convenience first-come, first-served basis (Luborsky and Rubinstein 1995). The first group was directly interviewed with participants of the Connected Women Conference – 24th Dec 2022 -- Islamabad, Pakistan, consisting of 26 in number. The second group was interviewed online and consisted of 214 women living in Pakistan. For this a snowball sampling strategy is used (Patton 2015; Nikolopoulou (2022), snowball sampling is a non-probability sampling method that uses the current study participants to recommend new volunteers who share a common interest to participate in the study. This procedure persisted until the researchers obtained the desired sample or reached saturation point (Nikolopoulou 2022). Cossham and Johanson (2019) established that a key informant interview is a thorough qualitative discussion with a key informant who offers knowledgeable viewpoints on a research phenomenon or a specific topic that the researchers themselves lack. Data were collected during the year 2022-2023. In summary, the chosen sample size and data collection methods aim to provide a thorough and representative understanding of Pakistani women's involvement in the online market, while prioritizing participant privacy and data security.

Results and discussion

Analysis and assessment of the level of ICT development by gender for 2017-2022. In many countries, especially in developing countries, the cost of connecting to the Internet, prices for ICT devices, and the cost of ICT services are high, which cannot but affect gender segregation. Due to greater responsibility for the family and raising children, women have significantly less free time than men. Thus, women, to a greater extent than men, are limited in the possibilities of using and distributing their material, financial, and time resources in everyday life. After social media platforms such as Facebook, Instagram, Twitter, and TikTok were opened, women began to spend a large amount of time on such digital platforms (Statista, 2023). In addition, women began to use many of these network resources as online marketplaces.

Differences between women and men by level of access to digital resources were analyzed based on the collection and processing of data from statistical collections of Pakistan in the range of 2017-2022. The share of women involved in the online environment grew annually, taking into account the massive adoption of various Internet practices due to the pandemic and the need to switch to a remote format of interpersonal communications (Tripathi et al., 2023).

Indicators of Internet use among women and men are presented in Figure 1.

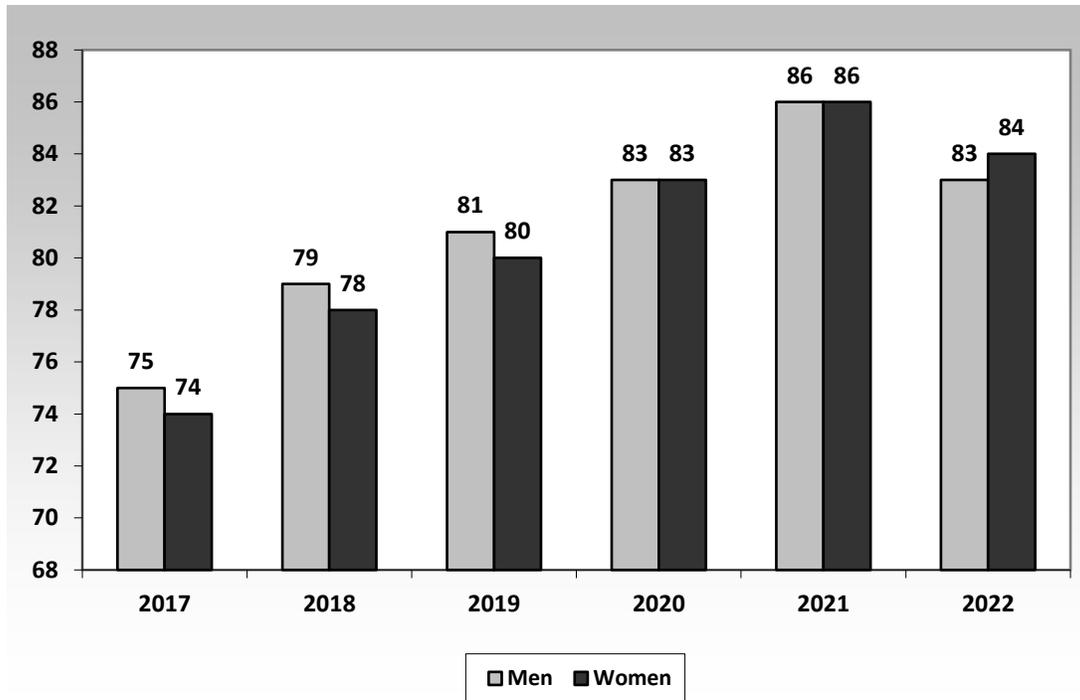


Figure 1 – Intensity of Internet use between men and women for 2017-2022, in%

Note – compiled by the authors based on data from the Bureau of National Statistics of the Agency for Strategic Planning and Reform of the Republic of Pakistan

The data presented on Internet use shows that women in 2022 became more immersed in online activity than men. Thus, the share of women involved in the online environment increased by an average of 1% in 2022. It is already clear that it will increase sharply, taking into account the massive adoption of various Internet practices necessary for remote work. Compared to 2017, the intensity of Internet use by men was higher, by an average of 1%. Among the regions of Pakistan, the largest number of Internet users among women and men is located in Karachi and Lahore (Digital 2022: Pakistan). Next, the analysis of mobile statistics becomes important as the world becomes increasingly digital, information becomes widely available on the Internet, and consumer habits also change accordingly. More than half of online goods purchases are made using mobile devices by Internet users. Indicators of mobile device use among women and men are presented in Figure 2.

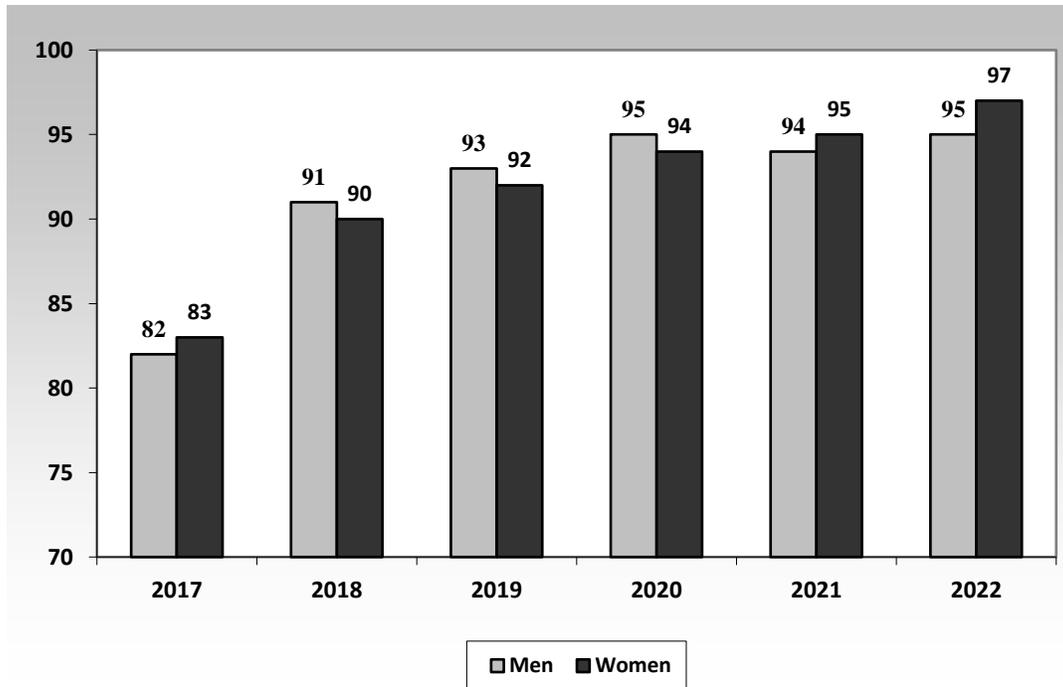


Figure 2 – Intensity of mobile device use between men and women for 2017-2022, in%

Note – compiled by the authors based on data from the Bureau of National Statistics of the Agency for Strategic Planning and Reform of the Republic of Pakistan

The given data on the share of mobile device users also shows that women in 2022 began to use it more than men. Thus, the share of users among women increased in 2022 by an average of 2%. Compared to 2018, the intensity of mobile device use among men was higher, by an average of 1%. Analysis of data for 2017-2022. Emphasizes the growing popularity of using mobile devices among women. As for the situation of using mobile devices in the regions of Pakistan, the situation here is very interesting. This can be called a “regional paradox” when regions such as Karachi are usually characterized by a high level of development of ICT infrastructure and are one of the most prosperous regions. It is noteworthy that the leaders according to data among mobile device users among men and women are: Lahore and Islamabad region. However, in most regions of Pakistan, mobile devices are actively used and these figures are constantly growing.

Incorporating a scientific approach to data collection, hypothesis testing, and field research within the project is a strategic move to bolster existing capabilities and advance toward field planning objectives. This method not only brings rigor to the field analysis but also aligns with the thoroughness applied in analyzing secondary data. It's worth noting that, from a planning perspective, qualitative methods, with their inherent flexibility, facilitate spontaneous and adaptable interactions between researchers and respondents. This adaptability is a valuable asset in gaining nuanced insights during the research process. (Bernard, 1995; Denzin & Lincoln, 2000; Nkwi et al., 2001). For example, Bartlett & Cox (1982) the application of the scientific inquiry process to field research has resulted in the development of a robust framework. This framework exhibits strength in its ability to guide two distinct forms of field analysis, particularly in the realm of spatial information. The first form involves deepening knowledge and understanding of a specific problem or issue, providing a comprehensive perspective (Priscilla and Dawn, 2012). The second form goes beyond, aiming for enhanced knowledge and explanation, potentially leading to theory building or modeling with significantly heightened explanatory power (Galit and Otto, 2011). This dual-focus approach adds depth and versatility to the field research, enriching both practical insights and theoretical advancements.

Quantitative assessment of the level of development of online market in Pakistan

Qualification methods ask “closed” and “open” questions, which are not necessarily formulated in the same way for each participant. Succinctly captured the distinction between closed and open-ended questions in research methods. Closed questions offer predefined options or evaluations, while open-ended questions allow participants to respond in their own words, yielding more nuanced and complex answers beyond a simple “yes” or “no.” Qualitative methods, exploring the

researcher-participant relationship with a less formal tone than quantitative research, enable a more detailed exchange. Participants have the freedom to express themselves, and researchers can adapt subsequent questions based on the information shared, fostering a dynamic and responsive research process.

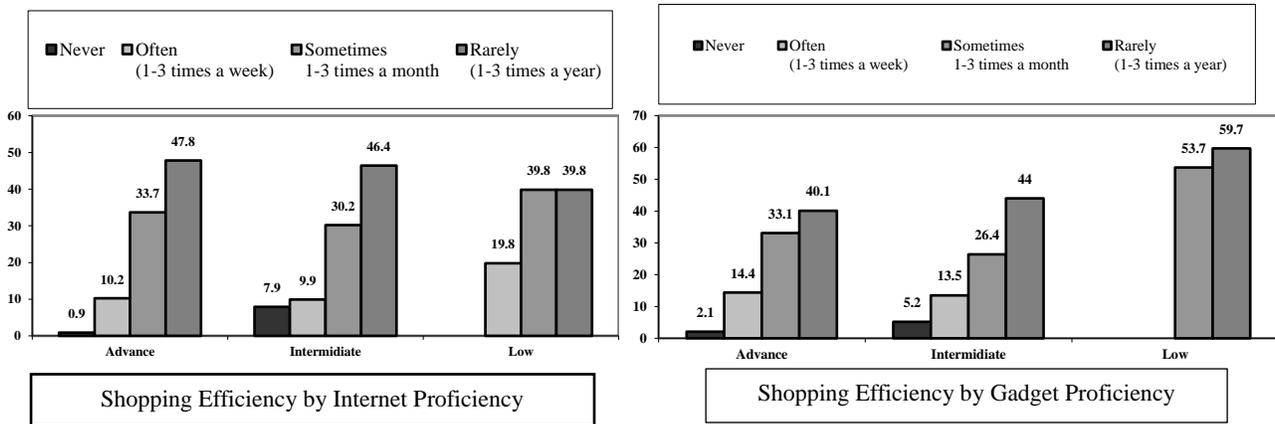
The usefulness of fieldwork in this study:

- Enhanced observation skills play a pivotal role in gaining a deeper understanding of the processes involved in analyzing the access, participation, and benefits of the online market for women in Pakistan. This improvement contributes to a more nuanced and insightful examination, allowing for a thorough comprehension of the factors influencing women's engagement in the online market. It enables researchers to grasp the intricacies of the dynamics at play and facilitates a more comprehensive and accurate analysis of the challenges and opportunities women face in this digital landscape.

- Expanding the geographical scope to include 15 cities in Pakistan, such as Karachi, Lahore, and Islamabad, enhances the research's depth and breadth. Interacting with respondents across these diverse locations allows for a more comprehensive understanding of regional nuances and variations. It broadens the perspectives captured in the study, providing insights into how factors like geography, culture, and local dynamics influence women's participation in the online market. This increased geographical interest enriches the research, making it more representative and reflective of the diverse experiences within different cities of Pakistan.

This section is intended to provide context for the discussion in subsequent modules of advocacy procedures for survey participants. Qualitative research, like all research, usually receives formal training in research ethics. In general, data collection activities require individual informed consent from the respondent. Examples of such activities are in-depth interviews and focus groups. It is a common practice to use quantitative data to justify the need for change. It will therefore be necessary to ensure a high level of familiarity with the standard indicators for women involved in the interview process. This section outlines the key research questions for each area of study that are "interpreted" into more specific questions. They should be regarded as suggestions for possible questions that may be useful for research. Additionally, the wording of questions must be customized to the respondent addressed, and some questions may not be relevant to certain types of respondents. Therefore, in this study, in order to obtain more reliable and accurate data, a survey on mixed questions will be conducted, where all answers (alternatives) will be listed, allowing the respondent the freedom to express their opinion.

The following forms of research were used to visualize the data: tabular, graphical, grouping and generalization. The survey results were processed using the STATA program. The criterion for representativeness was their age/place of residence. Women who often make online purchases are characterized by an average and advanced level of knowledge of computers and other gadgets (Figure 3).



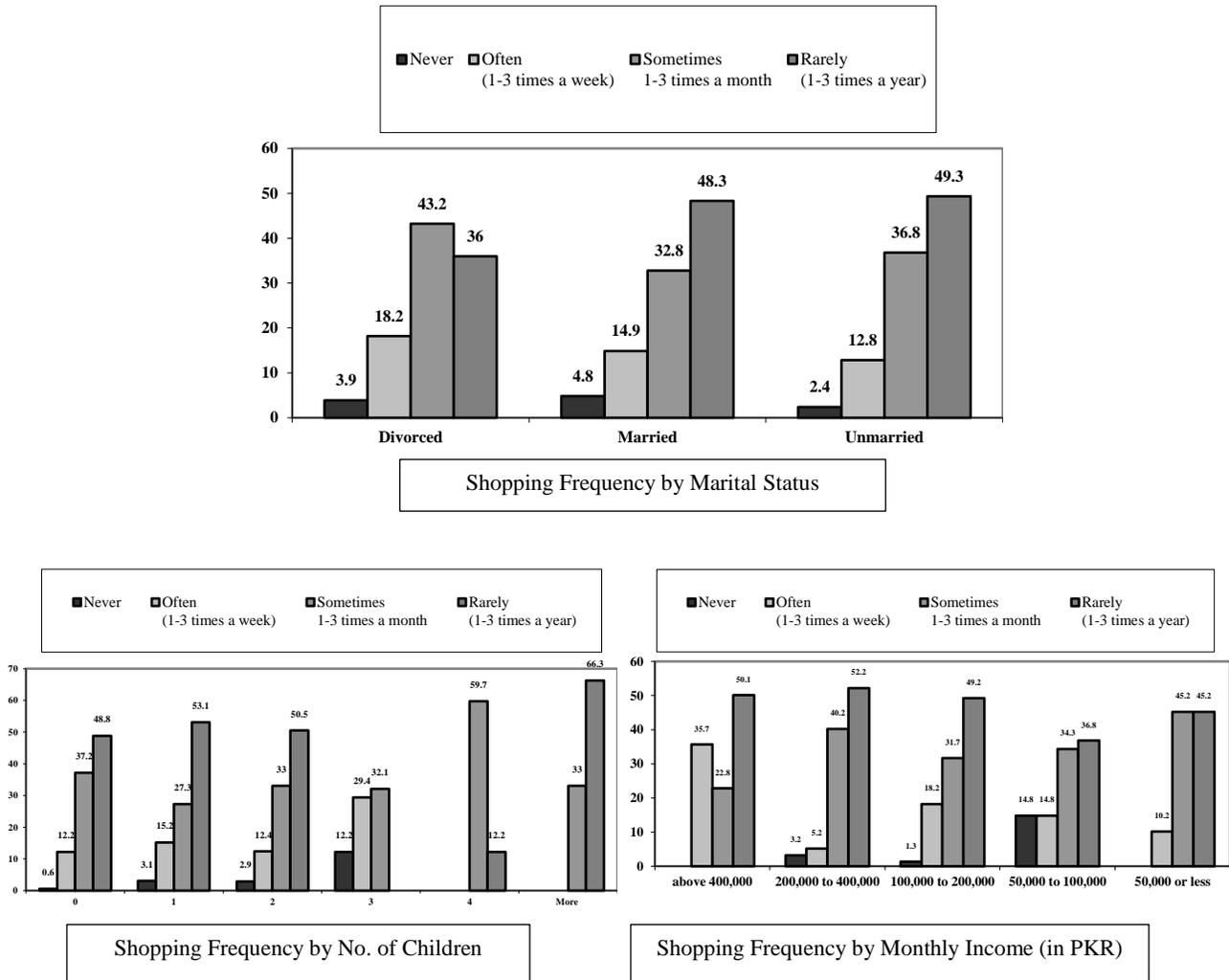


Figure 3 – Frequency of online purchases (Note – compiled by the authors based on collected data)

Analyzing the survey results from 343 women, it's interesting to note the frequency of online purchases. Among the respondents, 49 women make online purchases 1-3 times a week, 154 women make purchases once a month, and 114 women make purchases 1-3 times a year. Additionally, a portion of the participants, comprising the rest, had not made online purchases before.

Delving into the time spent on online purchases, it's observed that less than 15 minutes are spent by 82 women, while 110 women allocate around 30 minutes, and a significant 125 women invest an hour or more in their online shopping activities. These findings provide valuable insights into the diverse online purchasing behaviors and time investments among the surveyed women.

Next, the results of respondents were obtained for the most attractive offline shopping places (Figure 4).

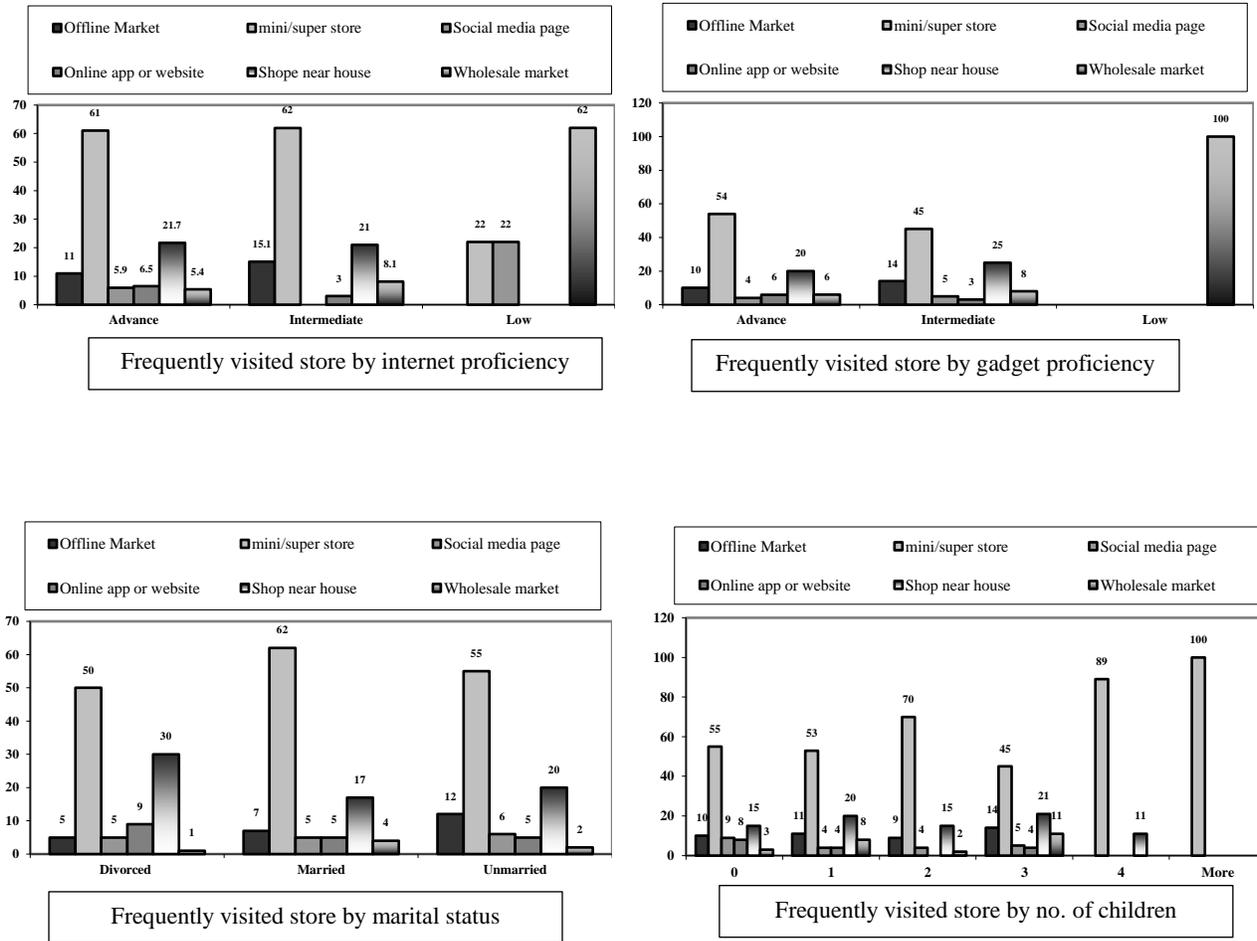


Figure 4 – Places of online and offline purchases among women Note – compiled by the authors based on the collected data

Among Pakistani women, the most attractive places for shopping, both offline and online, are mini/super/hypermarkets. When purchasing food products, a store near their home is added to it; when purchasing non-food products, an online marketplace is added. It should be noted that mini/super/hypermarkets are preferred by women with four or more children, a store near home is preferred by women with low levels of Internet and gadget knowledge, as well as low income. The distribution of respondents' answers about the online markets they use is presented in Figure 5.

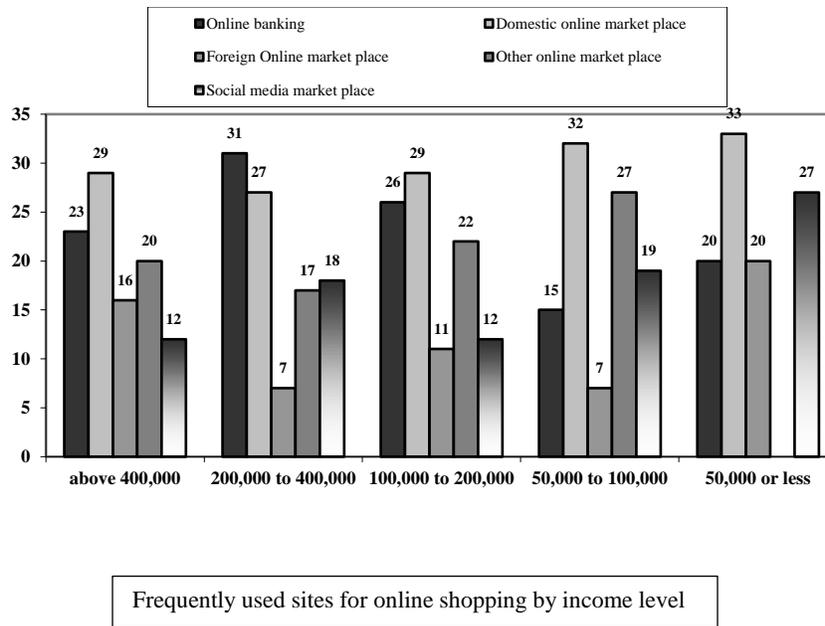


Figure 5 – Online markets used by Pakistani women Note – compiled by the authors based on collected data

The following features of online shopping should be highlighted. The website of a specific store is visited by respondents for each need. At the same time, domestic online marketplaces are more popular among Pakistani women than foreign online marketplaces. It should be noted that for women with low levels of Internet and gadget skills and low income, online shopping through social networks is preferable

The most popular online marketplace among women is Daraz.pk, Facebook, Cybermart.pk, Symbios.pk, Aliexpress Food delivery marketplaces are the least popular among women.

Women use the website Daraz.pk, Cybermart.pk, and Symbios.pk to buy cosmetics and household items; to buy clothes

– Dawai.pk and Dvago to buy dietary supplements

Pakistani women use sites that allow them to take advantage of discounts

– These are Daraz.pk, Cybermart.pk and Symbios.pk,

Thus, the most popular marketplace is Daraz.pk. In 2022, Daraz.pk expanded its delivery geography to 118 cities and more than 500 locations in Pakistan and increased the range of products. An important component of Daraz.pk activities is the partner ecosystem, which unites services for individuals and retail companies

As for Facebook, it is popular

This is explained by the compressed format of presenting information, where an image or short video conveys the main meaning and content of the product. Today Facebook is a popular marketplace where almost the entire population of the country is registered, capable of holding a smartphone or using a computer. The reasons for the popularity of Facebook among women are the following: ease of working with the application; the ability to use hashtags; the regular appearance of interesting and useful improvements in the functionality; the simplest and most effective way to promote a personal page, brand, product or service on social networks.

The study sheds light on the digital prowess of many women entrepreneurs who adeptly leverage digital tools, mobile applications, and online marketplaces in their work. Notably, nearly all the women surveyed own and regularly use mobile phones equipped with 4G internet connectivity, and a substantial number also utilize other ICT tools like computers, laptops, and internet services.

While approximately 90% of the women actively engage with online marketplaces, there is a scope for improvement in the utilization of more advanced features. This presents an intriguing opportunity for planning interventions in the ICT domain, focusing on areas such as leveraging tools for investment attraction, strategic marketing, resource allocation, and effective monitoring and control over resource utilization. These insights provide a strategic foundation for developing targeted interventions to enhance the digital capabilities of women entrepreneurs:

The survey highlights a significant shift in the market dynamics after the pandemic, with a majority of participants noting a dramatic change. Many women entrepreneurs have become more actively involved in utilizing various online marketplaces, recognizing them as a safer avenue for conducting business during these challenging times. Interestingly, approximately half of the surveyed women acknowledged a surge in online sales post-pandemic, accompanied by a slight decline in sales to offline markets. Furthermore, a noteworthy one-third of respondents attributed increased business success to their adept use of online marketplaces. These findings underscore the transformative impact of the pandemic on business strategies, with a notable emphasis on the pivotal role played by online platforms in ensuring continuity and success.

The study reveals that among women entrepreneurs, Daraz.pk and Facebook are the top two online marketplaces, frequently chosen for business development. Encouragingly, a significant number of women entrepreneurs express their intention to further expand their businesses through these online platforms.

Another noteworthy finding is that some women exhibited remarkable courage by leaving traditional employment to embark on their entrepreneurial journeys. Their confidence in pursuing independent ventures was bolstered by their adeptness in basic digital skills, such as photo and video editing. Consequently, it becomes evident that a considerable number of women navigated the challenges of the pandemic with resilience, successfully nurturing their own "female-themed" business projects spanning clothing, cosmetics, beauty salons, children's products, toys, and more. This underscores the transformative power of digital skills and entrepreneurship even in the face of adversity.

In conclusion, it is noted that changes in the offline market and the online market were observed by many women during the COVID-19 pandemic. Attention should be given to the fact that half of the women entrepreneurs surveyed acknowledged that sales in the online market were significantly increased by the pandemic, while sales in the offline market decreased. In addition, office work is not of interest to many women; instead, digital resources are actively utilized, and women are not afraid to successfully develop their own business projects on "women's topics." At the same time, the use of more advanced functions and planning interventions in the field of ICT was reported by fewer of the women entrepreneurs surveyed. The priority areas for obtaining additional knowledge were identified as digital marketing, strategic management, and soft skills.

Conclusion

In this study, we proceeded from the scientific assumption that the recession and difficulties in the labor market due to COVID-19 will affect women more than men. Because women are more likely to work in temporary positions, work part-time, and are forced to take time off or even leave work to care for children or elderly relatives. In addition, data shows that there are significant pay gaps between men and women in many regions of Pakistan. The study examined the most common factors influencing women's participation as consumers and business owners, driven by digital literacy, social status, and digitalization of the economy. In addition, this study is a domestic study to compare the impact of Internet access and ICT access from a gender perspective. Based on the study, the following conclusions were drawn. During the analysis of the obtained data, the following research was revealed.

First, descriptive statistical analysis during the period 2017-2022, among men and women showed that women's employment during the pandemic decreased significantly compared to men's employment. It is interesting that the leaders in terms of data volume among mobile device users among men and women are the city of Lahore and the Islamabad region. This is called a "regional paradox" when regions such as Karachi are usually characterized by a high level of ICT infrastructure development and are among the most prosperous regions.

Secondly, restrictions during the COVID-19 pandemic have revealed the main challenges for women's participation in the economy in the context of digitalization. The weak link in women's participation in the digital economy has been the lack of new skills and knowledge. Also, a factor that has a negative impact on women's participation in the economy is lack of time. Many women noted that they receive support and assistance from their husbands in developing their own businesses. Consequently, the lack of support from family members can be defined as a negative factor for business development and economic activity.

Third, a semi-structured interview with Pakistani women about their participation in the online market showed that more than 154 Pakistani women surveyed make online purchases at least once a month, popular sites in Pakistan for online shopping are Daraz.pk, Facebook, Cybermart.pk, Symbios.pk, Aliexpress. It's interesting to note that among Pakistani women, domestic online markets have garnered greater popularity compared to foreign counterparts. The pandemic has not only influenced the overall number of online purchases but has also brought about a shift in their composition. Women are now more inclined to order medicines, food, and takeaways online, prioritizing safety and efficiency in cost and time.

The offline survey results align with the growing trend of strong digital skills among women entrepreneurs. Many are adept at utilizing digital tools, mobile applications, and online markets in their work, showcasing a robust integration of technology in their entrepreneurial endeavors. This digital proficiency likely contributes to their resilience and adaptability, especially in navigating challenges posed by the pandemic. Despite differences in social status between women, as well as the level of education and the availability of digital skills, women adapt to the new realities of the digital economy and contribute to the sustainable development of the economy in Pakistan. The results of the study can be taken into account in the development

of a program to support women's entrepreneurship in Pakistan. Especially when determining the direction of women's entrepreneurship. "Research of factors, features, and dynamics of demographic processes, migration, urbanization in Pakistan, development of digital maps and forecasts."

Managerial Significance

Gender-Inclusive Policies: The study suggests that the recession and challenges in the labor market due to COVID-19 disproportionately affect women. Managers can use this insight to develop and implement gender-inclusive policies, ensuring equal opportunities for women in the workforce, particularly in times of economic uncertainty.

Business Support Programs: The findings highlight the importance of family support for women entrepreneurs. Managers can consider incorporating family support initiatives into business support programs, recognizing the role it plays in women's business development and economic activity.

Digital Literacy Programs: Given the impact of digital skills on women's resilience during the pandemic, organizations and policymakers can invest in digital literacy programs. These initiatives can empower women to navigate the digital economy successfully, fostering adaptability and sustainability.

Market Strategy: Businesses can tailor their market strategies based on the shifting trends in online purchases among women. Understanding the preference for domestic online markets can help businesses target their products and services more effectively.

Entrepreneurial Development: The study suggests that despite differences in social status and education, women entrepreneurs showcase strong digital skills. This insight is valuable for designing programs to support women's entrepreneurship, with a focus on enhancing digital proficiency.

Academic Significance

Gender Dynamics in Economic Challenges: The research contributes to understanding the gender dynamics in economic challenges during crises. This academic insight adds to the broader discourse on the differential impacts of economic downturns on men and women, especially in developing regions like Pakistan.

Digitalization and Women's Participation: The study delves into the intersection of digitalization and women's participation in the economy. This academic exploration sheds light on the challenges and opportunities presented by the digital economy for women, contributing to literature on gender and technology.

Online Market Behavior: The findings regarding online shopping preferences and behaviors among Pakistani women contribute to the academic understanding of consumer behavior in the context of a pandemic. This information is relevant for researchers studying the evolving landscape of e-commerce.

Resilience and Adaptability: The academic significance lies in uncovering the resilience and adaptability of women entrepreneurs in the face of challenges. This adds to the literature on entrepreneurship, gender studies, and the role of technology in promoting adaptability.

In summary, this research not only provides practical insights for managerial decision-making but also contributes valuable knowledge to the academic community, advancing our understanding of gender dynamics, digitalization, and entrepreneurial resilience in the context of economic challenges.

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CONFLICT OF INTEREST

On behalf of all authors, the corresponding author states that there is no conflict of interest.