

**Digital Divides and Economic Empowerment: Mobile Phone Usage among
Rural Women in Sindhupalchowk, Nepal**

A Thesis

**Submitted to : The Central Department of Sociology,
Faculty of Humanities and Social Science, Tribhuvan University,
In Partial Fulfillment of the Requirement for the Degree of Master of
Arts in Sociology**

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2025

Declaration

I hereby declare that the present thesis entitled, “**Digital Divides and Economic Empowerment: Mobile Phone Usage among Rural Women in Sindhupalchowk, Nepal**”, is my original work done for partial fulfillment for the requirement of the degree of M.A. Central Department of Sociology, T.U. under supervision of Dr. Keshab Silwal, Assistant Professor. All the ideas borrowed from the different authors are well acknowledged. The result of this thesis has not been presented or submitted anywhere else for the award of any degree for any other purposes. I assure that no part of the content of this thesis has been published in any forms before.

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Letter of Recommendation

This is to certify that the thesis work entitled “**Digital Divides and Economic Empowerment: Mobile Phone Usage among Rural Women in Sindhupalchowk, Nepal**” has been prepared by Zhao Zi Peng under my supervision. Therefore, I forward this thesis for its final evaluation and approval as per the rules of the department.

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Approval Letter

This is to certify that the thesis work entitled “**Digital Divides and Economic Empowerment: Mobile Phone Usage among Rural Women in Sindhupalchowk, Nepal**” prepared by Mr. Zhao Zi Peng has been accepted for partial fulfillment of the requirements of the Master's Degree in Sociology by the evaluation committee.

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Acknowledgements

This thesis would not have been possible without the guidance, encouragement, and generous support of many individuals. It is with a heart full of gratitude that I take this opportunity to express my sincere thanks to all those who, in different ways, have contributed to the completion of this academic journey.

First and foremost, I would like to extend my deepest appreciation to my supervisor, Assistant Professor Keshab Silwal. His academic expertise, thoughtful insights, and consistent encouragement have played a crucial role in shaping this research. From the earliest stages of this study to its final form, he has provided unwavering guidance, always with kindness and patience. His detailed feedback and constructive criticism not only helped me sharpen my analytical skills but also inspired me to push beyond my limits. I am truly thankful for his dedication, which went far beyond academic responsibility—his mentorship has left a lasting impact on my academic life and personal growth. Thank you for believing in my potential, and for being a constant source of wisdom and inspiration throughout this process.

I am also very grateful to all the faculty members of the Central Department of Sociology at Tribhuvan University. The knowledge I have gained from your lectures, discussions, and classroom interactions has enriched my understanding of the subject and laid the foundation for this research. I am especially thankful for the supportive academic environment you have cultivated, where critical thinking and creativity are valued and encouraged. The insights I gained from various courses and seminars have helped me approach my topic with both sensitivity and academic rigor.

Special thanks go to the women in Sindhupalchowk who participated in my research. I am humbled by their willingness to share personal stories and experiences with me. Their voices are the very essence of this study. Despite facing many challenges in their daily lives, they welcomed me with warmth and openness. It is their strength, resilience, and honesty that gave this research its true meaning. I am deeply honored to have had the opportunity to listen to their perspectives and document their lived realities.

I also want to acknowledge the support of my friends, who stood by me during moments of doubt and fatigue. Whether through long conversations, insightful feedback, or just quiet presence, your companionship has meant more than words can express. You have made this journey less lonely and much more meaningful. Your encouragement has helped me stay focused and hopeful, even during the most challenging phases of this work.

Furthermore, I would like to express my sincere gratitude to the administrative staff of the department for their assistance and cooperation throughout the research process. Their help with logistics, documentation, and coordination made many things

smoother and more manageable.

Most importantly, I owe a profound debt of love and gratitude to my family. Your unwavering support, sacrifices, and constant encouragement have been the backbone of my academic journey. Thank you for standing by me with patience and care, even when I was overwhelmed or discouraged. Your belief in me gave me the courage to move forward, and your presence has been my greatest source of strength.

Finally, I extend my appreciation to all individuals, near and far, who have encouraged and inspired me along the way—whether through a kind word, a piece of advice, or a moment of understanding. Every gesture has helped me stay committed to this work.

To everyone who has contributed to this thesis, directly or indirectly: thank you, from the bottom of my heart. This achievement belongs to all of us.

Abstract

This study examines the role of mobile phones in bridging the digital divide and promoting the economic empowerment of rural women in Sindhupalchok, Nepal. As mobile technology becomes more accessible, it offers marginalized communities new opportunities to overcome barriers to financial resources, market participation, and information access. Using a mixed methods approach—combining surveys, in-depth interviews, and ethnographic observations with 25 rural women—this research explores how mobile phone usage intersects with sociocultural norms, gender dynamics, and economic opportunities.

Findings show that mobile phones enhance women's access to financial services, agricultural knowledge, and market linkages, enabling income generation and greater household decision-making power. Many use mobile banking for financial transactions, reducing reliance on male family members and increasing autonomy. Mobile-based agricultural advisory services help improve productivity, while direct communication with buyers and suppliers strengthens entrepreneurship and financial independence.

However, patriarchal norms, limited digital literacy, and infrastructural challenges still hinder these benefits. Many women face restrictions on phone ownership and use, often controlled by male household members who see technology as a challenge to traditional gender roles. Digital literacy gaps limit effective use of mobile banking and online markets, while unreliable network coverage and high data costs create further obstacles, especially in remote areas.

While mobile phones facilitate communication, entrepreneurship, and economic independence, deep-rooted gender norms continue to constrain their full impact. This study highlights the need for gender-sensitive policies, digital literacy programs, and better infrastructure to maximize mobile technology's potential. By examining the interplay between technology, empowerment, and sociocultural structures, it contributes to the global discourse on digital inclusion and gender-equitable development in rural Nepal.

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Chapter 1

Introduction

1.1 Research Background

For centuries, the study, titled “Digital Divide and Economic Empowerment: Mobile Phone Use among Rural Women in Sindhupalchok, Nepal,” aims to explore how mobile phone technology can contribute to the economic empowerment of rural women by overcoming the barriers presented by the digital divide. The digital divide refers to the gap between individuals or communities who have access to digital technology and those who do not, a gap that extends beyond physical access to include differences in skills, use, and benefits derived from technology. Scholars argue that the digital divide is not only a technological issue, but also a reflection of broader socioeconomic inequalities, especially for marginalized groups such as rural women (DiMaggio & Hargittai, 2001; Van Dijk, 2006). For rural women in Nepal, this gap is often exacerbated by cultural norms, economic constraints, and educational inequalities that prevent them from accessing mobile phones and other information and communication technologies (ICTs).

From a theoretical perspective, the concept of the digital divide has evolved from merely identifying gaps in access to understanding how differences in skills and use affect socioeconomic development. Van Dijk (2006) stressed that the digital divide consists of four distinct but interrelated dimensions: motivational access, material access, skill access, and access to technology. For rural women in Nepal, all of these dimensions present challenges. For example, motivational access can be limited by sociocultural beliefs that discourage women from using technology tools. Material access is limited by economic barriers, as poverty remains a persistent challenge, with approximately 25.2% of the population in Sindhupalchowk living below the poverty line, earning less than \$1.50 per day (Nepal Central Bureau of Statistics, 2023). Educational gaps hinder skill acquisition, with female literacy rates lower than males, especially in rural areas. Finally, limited digital literacy and a lack of relevant content aimed at women’s economic empowerment limit access to technology.

Economic empowerment, on the other hand, refers to the process by which individuals, especially marginalized groups such as rural women, gain the ability to make decisions,

control resources, and enhance economic opportunities. According to Kabeer (2005), economic empowerment involves expanding people's ability to make strategic life choices that were previously denied to them. It encompasses various aspects, including economic independence, access to resources, participation in economic activities, and the ability to influence the economic policies and practices that shape their lives. From a sociological perspective, economic empowerment is closely related to agency, autonomy, and social inclusion. Research shows that improving women's access to financial resources and technology can significantly improve their socioeconomic status and promote gender equality (Duflo, 2012).

The relationship between the digital divide and economic empowerment is complex but critical. The digital divide is a significant barrier to women's economic empowerment, as limited mobile technology use limits their ability to access information, participate in financial transactions, increase productivity, and engage in entrepreneurial activities. According to the International Telecommunication Union (ITU), more than 52% of women worldwide are still offline, with the majority living in developing countries (ITU, 2020). The Global System for Mobile Communications Association (GSMA) also reported that women in low- and middle-income countries are 10% less likely than men to own a mobile phone and 23% less likely to use mobile Internet services (GSMA, 2022). In Nepal, only about 65% of women have access to mobile phones, compared to 81% of men, and this technological gap further exacerbates their economic marginalization (Nepal Telecommunication Authority, 2024).

Closing the digital divide is critical to promoting economic empowerment, as mobile phones provide rural women with unique opportunities to access information, increase agricultural productivity, participate in business activities, and improve their overall quality of life. Mobile phones can provide access to agricultural information, market prices, financial services, and social networks, all of which can significantly increase women's economic participation and decision-making power. Studies have shown that providing women with mobile phones can increase income, enhance control over financial resources, and strengthen household decision-making power (World Bank, 2018; Aker & Mbiti, 2010).

Rural women in Nepal, especially those in Sindhupalchowk, face unique challenges. They are often excluded from formal economic activities, lack access to education, and have limited

control over household resources. Cultural expectations and gender-based discrimination exacerbate their social and economic marginalization. In addition, traditional norms that place women primarily in reproductive and domestic roles continue to limit their mobility and economic participation (Bhasin, 1993; Acharya, 2003). While mobile phones have the potential to improve women's socioeconomic status, their use remains limited by sociocultural and economic barriers.

This study aims to investigate how rural women in Sindhupalchowk use mobile phones for economic purposes and what barriers they face in using these devices effectively. Furthermore, it seeks to understand how mobile technology can be used to overcome the existing digital divide and empower women economically. Through this study, I intend to contribute to the broader discussion of digital inclusion and gender equality by gaining insights into the potential of mobile technology to empower marginalized women economically and socially. The findings of this study were not only shed light on the current state of digital inequality but were also provide recommendations for economic empowerment through mobile technology. Furthermore, this study was explore the role of government and non-government interventions aimed at increasing digital access for rural women in Nepal and how these efforts can be improved to better meet their needs.

A key challenge facing rural women in Sindhupalchok is low levels of digital literacy. Even for those who do own a mobile phone, many are not fully equipped to use these devices for economic purposes due to limited knowledge of mobile applications, internet usage, or online financial tools. Furthermore, there remains a significant gender gap in mobile phone ownership and usage in rural areas, often influenced by disparities in household income and social norms that prioritize male access to technology. Despite these barriers, mobile phones can be a powerful tool for change if women are empowered through proper training, access to resources, and support systems. Therefore, this study also explores the need for digital literacy programs and awareness campaigns to increase women's confidence and skills in using mobile technology for economic empowerment. Such interventions can play an important role in bridging the digital divide and supporting rural women's economic participation.

Ultimately, this study was explore how mobile phones can be used as a tool for economic empowerment, whether through accessing financial resources, participating in agricultural

markets, or engaging in small-scale entrepreneurship. By examining these aspects, this study aims to gain a comprehensive understanding of the intersection between digital technology and the economic empowerment of rural women in Sindhupalchowk, Nepal.

1.2 Statement of the Problem

The statement of the problem in this study focuses on the significant socio-economic challenges faced by rural women in Nepal, particularly in the district of Sindhupalchowk. Despite the rapid penetration of mobile phone technology and the global recognition of the importance of women's empowerment, rural women in this region continue to face systemic barriers that limit their participation in economic activities and hinder their ability to improve their socio-economic status. These barriers are compounded by poverty, gender inequality, and limited access to resources and opportunities that could lead to sustainable empowerment. This study seeks to investigate the role of mobile phones as a potential tool for economic empowerment and to explore why, despite various development interventions, improvements have been slow and insufficient.

Nepal, like many other developing countries, struggles with the persistence of extreme poverty, with significant portions of its population living below the poverty line. In the specific district of Sindhupalchowk, nearly 25.2% of the population survives on less than \$1.5 a day, making these areas highly vulnerable to economic shocks and stagnation (Nepal Central Bureau of Statistics, 2023). Within this context, women, particularly rural women, are disproportionately affected by poverty, gender bias, and limited access to economic opportunities. This disparity not only hampers their personal growth and autonomy but also restricts the overall development of their families and communities. The gap in women's access to education, financial resources, and decision-making power is a major contributor to this inequality, affecting their ability to contribute effectively to their households' economic activities.

The historical and socio-cultural factors that contribute to gender inequality in Nepal are deeply embedded in its traditional structures and practices. Despite some legal advancements, women remain largely confined to domestic roles, with few opportunities for social and economic participation outside the household. In rural areas, where the majority of the population relies on agriculture for their livelihood, women's work is often undervalued, and they are excluded from the benefits of economic activities. Additionally, limited mobility,

lack of access to credit and financial services, and cultural norms that prioritize male authority contribute to the challenges women face in achieving economic independence.

At the same time, mobile phone technology has emerged as a potential tool for bridging the digital divide and providing rural populations with access to information, markets, and services that were previously unavailable or difficult to reach. With over 36 million mobile phone users in Nepal, the country has seen a rapid rise in mobile phone penetration, which could serve as a vital resource for improving the economic status of women. Mobile phones can facilitate access to a wide range of services, including agricultural information, health advice, financial services, and education, all of which could significantly enhance women's economic opportunities. Furthermore, mobile phones can also serve as a means of communication, enabling women to participate in the broader socio-economic activities of their communities and beyond.

Despite the potential benefits of mobile phones, however, there is limited research on how women in rural areas of Nepal are actually using mobile technology for economic purposes. While various development initiatives have sought to empower women through technology, there is a lack of comprehensive understanding of how mobile phones are being utilized by rural women to generate income, enhance their economic status, or access essential resources. The question arises: Why, despite the proliferation of mobile phones, have rural women not experienced significant improvements in their economic status?

This study focus on the rural women of Sindhupalchowk district. It aims to investigate how these women are using mobile phones for economic purposes, such as income generation, access to markets, or financial management. The research explores the specific ways in which mobile phones have impacted their economic activities, as well as the barriers that limit their ability to fully leverage mobile technology. It also examines the broader socio-cultural and economic factors that influence their use of mobile phones and assess the effectiveness of current mobile-based development programs targeted at women.

The problem this study seeks to address is not simply about the availability of technology, but about the unequal opportunities and systemic challenges that prevent rural women from fully benefiting from the advancements in mobile phone technology. It explores the factors that have hindered the effective use of mobile phones by women in the context of their economic empowerment. These factors include cultural norms, lack of digital literacy, financial

constraints, and the limited scope of existing mobile-based development programs.

The research also aims to challenge the prevailing assumptions that technological access alone can empower women. While mobile phones can offer significant benefits, it is essential to recognize that technology cannot operate in isolation from the socio-economic and cultural contexts in which it is embedded. The study seeks to understand how rural women navigate the complex interplay between technology, gender roles, and economic constraints, and how these factors shape their ability to use mobile phones effectively for economic empowerment.

Furthermore, the study critically examines why previous development efforts that have sought to improve the economic status of rural women through mobile technology have not resulted in widespread success. Despite the growing recognition of the potential of mobile phones, many such initiatives have fallen short of their objectives due to a lack of targeted interventions, inadequate infrastructure, or a failure to address the underlying gender disparities that limit women's ability to benefit from technology. The study explores the reasons behind these shortcomings and suggests ways in which mobile phone-based interventions can be better designed to meet the specific needs of rural women.

The research questions guiding this study are as follows: What are the impacts and contributions of mobile phones on the economic status of rural women in Sindhupalchowk? Do the women of these districts use their mobile phones for economic benefits, and if so, how? By addressing these questions, the study aims to contribute to a deeper understanding of the role of mobile phones in the economic empowerment of rural women in Nepal, and to provide recommendations for future interventions that can help maximize the potential of mobile technology in enhancing women's economic opportunities.

In conclusion, the statement of the problem highlights the critical need to address the socio-economic challenges faced by rural women in Nepal and to explore the role of mobile phones in overcoming these challenges. It is clear that mobile phones hold great promise as a tool for economic empowerment, but their potential has not yet been fully realized. This study aims to bridge this gap by providing insights into how rural women can harness the power of mobile technology to improve their economic status, and by identifying the barriers and opportunities that shape their use of mobile phones in the context of their economic lives.

1.3 Research Questions

Question 1: How do mobile phones impact the economic empowerment of rural women in Sindhupalchowk?

Question 2: What social and structural barriers do rural women face when using mobile phones for economic activities in Sindhupalchowk ?

1.4 Objectives of the study

To explore the prevalence and usage patterns of mobile phones among rural women in Sindhupalchowk.

To analyze the influence of mobile phone usage on the economic empowerment of rural women, including increased income and resource control.

To identify and examine the social, cultural, and structural factors that affect rural women's effective use of mobile phones for economic activities.

1.5 Rationale of the Study

The rationale for this study is to address the economic empowerment of rural women in developing countries like Nepal, where poverty, gender inequality, and limited access to resources remain significant issues. Despite improvements in gender equality, rural women continue to face barriers to economic participation, particularly in regions like Sindhupalchowk, where poverty rates are high and access to services is limited. This study investigates how mobile phones can help bridge these gaps and enhance rural women's socio-economic status.

Nepal's socio-economic landscape makes it relevant for this research, as it remains one of the poorest countries globally, with many people living in extreme poverty. While mobile phone usage is rapidly growing in rural Nepal, gender inequality continues to restrict women's economic activities to the domestic sphere. This study seeks to explore how mobile phones can empower women by providing tools to engage more effectively in economic activities.

The study focuses on Sindhupalchowk, a region facing challenges related to poverty, gender inequality, and limited access to essential services. Women in these areas are often excluded from economic opportunities and decision-making processes. By examining their experiences with mobile phone usage, this study aims to provide insights into how technology can

improve their economic status.

Additionally, the study aligns with global efforts to promote gender equality and women's empowerment as essential components of sustainable development. Empowering women economically has proven benefits for families, communities, and overall economic growth. Research has shown that women's control over household income positively affects child health, education, and well-being.

This study addresses a gap in the literature by focusing on how mobile phones can empower rural, low-income women with limited access to technology. Previous research has largely concentrated on urban areas or specific technologies like mobile banking. By focusing on rural Nepal, this study contributes to a better understanding of how mobile phones can improve women's economic participation. Moreover, mobile phone-based interventions are increasingly used in Nepal for health, education, and agriculture. However, their impact on rural women's economic empowerment remains underexplored. This study seeks to evaluate the effectiveness of these interventions and identify best practices for wider application.

The findings of this study may have broader implications for other developing countries facing similar challenges. The results can inform mobile phone-based interventions aimed at enhancing women's economic participation and improving their socio-economic well-being.

In conclusion, this study aims to explore how mobile phones can economically empower rural women in Sindhupalchowk, Nepal. By examining their experiences, the study contributes to the broader goal of achieving inclusive development through enhanced economic participation and improved well-being for women.

Chapter 2

Literature Review

2.1 Theoretical Review

The Sociological Theories on Digital Divide

The digital divide, a complex social phenomenon, can be examined through various sociological theories that seek to explain how technological inequalities emerge, persist, and influence economic empowerment. Understanding the digital divide requires not only analyzing technological access but also considering how social structures, power dynamics, and cultural norms shape individuals' ability to benefit from information and communication technologies (ICTs).

From the perspective of broader structural functionalism, the digital divide can be seen as a manifestation of sociological imbalances where social systems and structures fail to provide equal access to resources. Functionalists argue that social stability and order are maintained when institutions effectively fulfill their designated functions. However, technological advancements often outpace institutional adaptation, leading to disparities in access and usage (Parsons, 1951). In rural areas of developing countries like Nepal, unequal access to mobile phones reflects a structural imbalance where economic and educational systems fail to provide sufficient resources for technological adoption. This perspective emphasizes the need for institutional interventions to address inequalities and ensure that technological advancements contribute to social equilibrium (Merton, 1968).

Conflict theory offers a critical framework for understanding the digital divide by focusing on power relations, resource control, and social inequalities. According to conflict theorists, technology is not distributed equally because powerful groups manipulate technological development and access to maintain their dominance over marginalized populations (Marx & Engels, 1848). In the context of rural Nepal, the unequal distribution of mobile phones and other technologies can be attributed to broader economic and political structures that prioritize urban areas and wealthier groups. Castells (1996) argue that the network society exacerbates existing inequalities by concentrating technological and informational power among elites who control digital infrastructures. As a result, marginalized groups, particularly rural women, are left with limited opportunities to leverage technology for economic

empowerment. This perspective highlights the need for structural change and policy interventions aimed at democratizing technological access and promoting inclusive development.

Theories on Economic Empowerment

The concept of economic empowerment has been extensively explored through various theoretical frameworks that aim to understand how individuals and communities can gain control over economic resources and improve their quality of life. In the context of rural women in developing countries like Nepal, these theories are particularly relevant as they offer insights into how technological tools such as mobile phones can contribute to enhance their economic capabilities and overcoming structural barriers.

Amartya Sen's Capability Approach is a foundational theoretical framework for understanding economic empowerment from a human development perspective. Rather than focusing solely on income or material wealth, the Capability Approach emphasizes the freedom of individuals to achieve well-being and pursue the lives they value (Sen, 1999). It argues that true economic empowerment occurs when individuals have the freedom to enhance their capabilities, which include access to resources, opportunities, education, and health. From this perspective, technological access is not inherently empowering unless it contributes to expanding individuals' capabilities. In rural Nepal, where women face substantial barriers to economic participation, mobile phones can serve as a tool for expanding capabilities by providing access to information, financial services, and social networks. However, unequal access to technology can also reinforce existing inequalities, thereby limiting women's ability to exercise agency and improve their economic status (Robeyns, 2005). Thus, the Capability Approach highlights the importance of creating enabling environments that allow women to effectively utilize technology to enhance their economic empowerment.

Naila Kabeer's Empowerment Framework offers a comprehensive approach to understanding economic empowerment through the concepts of resources, agency, and achievements (Kabeer, 2005). Resources refer to material, social, and human assets that individuals can draw upon to achieve desired outcomes. Agency is the ability to make choices and act upon them, while achievements refer to the realization of desired outcomes. According to Kabeer, empowerment is a process through which individuals gain the ability to make strategic life choices, particularly in contexts where such choices were previously denied. In the context of rural women in Nepal, the availability of mobile phones can be seen as a resource that

potentially enhances agency by providing new opportunities for economic participation and decision-making. However, Kabeer emphasizes that access to resources alone is not sufficient for empowerment; individuals must also have the ability to utilize these resources effectively and translate them into meaningful achievements. This framework underscores the importance of addressing cultural and structural barriers that hinder women's ability to leverage technology for economic advancement. Without addressing these barriers, technological interventions may only result in superficial gains that do not translate into genuine empowerment. Social Capital Theory, as articulated by Robert Putnam, focuses on the role of social networks and relationships in facilitating economic empowerment (Putnam, 2000). Social capital refers to the networks of trust, norms, and social connections that enable individuals to access resources, information, and opportunities. Putnam argues that social capital is a critical determinant of economic development, as it influences individuals' ability to collaborate, share knowledge, and build collective action. In rural communities, where formal economic structures are often weak or inaccessible, social capital plays a crucial role in facilitating economic activities and providing informal safety nets. The use of mobile phones can enhance social capital by enabling rural women to build and maintain networks that provide access to economic resources and information. However, Putnam also warns that social capital can be exclusive and reproducing inequalities if access to networks is unevenly distributed. Therefore, promoting economic empowerment through technological interventions requires ensuring that marginalized groups, such as rural women, are able to participate fully in social and economic networks.

The theories of economic empowerment discussed above provide valuable insights into how technological tools like mobile phones can contribute to enhancing the economic agency of rural women. The Capability Approach highlights the importance of expanding individuals' freedoms and capabilities, emphasizing that technological access is only empowering when it contributes to the realization of valued goals. Promoting economic empowerment must address not only issues of access but also broader structural and cultural barriers that limit women's ability to effectively utilize available resources. The integration of these theories provides a comprehensive framework for analyzing how mobile phone technology can contribute to the economic empowerment of rural women in Nepal and other developing regions.

2.2 Empirical Review

Studies on Digital Divide

The empirical review of the digital divide focuses on both global and regional perspectives, analyzing how technological access and use are distributed unevenly across different populations. Globally, organizations such as the International Telecommunication Union (ITU) and the GSM Association (GSMA) have extensively studied digital inequalities. According to ITU reports, despite the increasing penetration of internet and mobile technologies worldwide, significant disparities persist between developed and developing countries. For instance, while nearly 90% of the population in developed countries has access to the internet, this figure drops to approximately 20-30% in the least developed countries (ITU, 2023). Factors contributing to this divide include affordability, infrastructural inadequacies, digital literacy gaps, and socio-cultural barriers (ITU, 2023).

The GSMA's Mobile Gender Gap Report series provides important insights into gender disparities in mobile phone ownership and internet usage in low- and middle-income countries. The 2023 report highlights that women are These disparities are particularly evident in rural areas where socio-economic constraints, limited digital literacy, and conservative gender norms restrict women's access to technological resources (GSMA, 2023). Moreover, the lack of gender-sensitive policies and interventions further significantly exacerbates these inequalities.

From a regional perspective, studies across various low-income countries in Asia and Africa reveal similar patterns of digital exclusion. In South Asia, research shows that patriarchal structures, cultural norms, and economic barriers limit women's access to technology (Hafkin & Huyer, 2007). Studies conducted in Nepal, for example, demonstrate that mobile phone ownership among women is significantly lower than among men, especially in rural areas where economic and educational disparities are more pronounced (Shrestha & Shrestha, 2021). Sub-Saharan Africa, women's access to mobile phones and the internet is constrained by factors such as poverty, illiteracy, and inadequate infrastructure (Alozie & Akpan-Obong, 2017). Furthermore, women's technological engagement is often restricted to basic communication, with limited participation in economic or educational activities via digital platforms.

The existing literature underscores the fact that the digital divide is a complex and

multifaceted phenomenon, shaped by structural inequalities related to gender, socio-economic status, and geography. While mobile phones have been widely recognized as essential tools for economic empowerment, their transformative potential remains unevenly distributed. Addressing these disparities requires a comprehensive approach that not only improves technological access but also tackles underlying socio-economic and cultural barriers. Therefore, a critical understanding of the digital divide from both global and regional perspectives is necessary to effectively promote empowerment through mobile technology in marginalized communities.

Digital Divide in Nepal

Nepal, a landlocked country in South Asia, is characterized by significant geographical, socio-economic, and cultural disparities, which also manifest in the realm of digital technology access. Despite advances in mobile technology, a persistent digital divide remains a crucial issue, with rural populations, women, and marginalized groups facing severe barriers to accessing and utilizing digital tools. One of the most striking aspects of this divide is the gender gap in mobile phone usage. According to a report by the International Telecommunication Union (ITU), mobile phone penetration in Nepal stands at over 120% (ITU, 2022), which implies that many individuals own multiple devices. However, a deeper examination reveals a gender disparity, with men being significantly more likely to own mobile phones than women. The Nepal Telecommunications Authority (NTA) highlights that female mobile phone penetration lags behind male penetration by approximately 10-15%, especially in rural and mountainous regions, where socio-cultural norms and economic factors limit women's access to technology (NTA, 2021).

The gender digital divide is driven by multiple factors, including economic constraints, lack of digital literacy, socio-cultural barriers, and infrastructure challenges. In rural areas, women are often responsible for household chores and caregiving roles, which limits their access to the outside world, including digital technologies. Moreover, internet access and smartphone affordability are still limited, particularly in marginalized communities (Haidar et al., 2020). The lack of education and digital literacy further exacerbates this issue. Women, particularly those in rural and underserved areas, are less likely to have received education or training in digital technologies, which significantly restricts their ability to benefit from mobile phones for economic empowerment or social inclusion (Sharma & Thapa, 2021).

In response to the challenges posed by the digital divide, both the Nepalese government and

non-governmental organizations (NGOs) have taken several initiatives to promote digital inclusion. The government, in collaboration with international partners, has focused on improving telecommunications infrastructure in rural areas, particularly through network expansion, internet connectivity projects, and the subsidization of mobile phone services. For example, the Digital Nepal Framework aims to leverage technology for national development by promoting digital literacy, online services, and e-commerce, particularly in rural communities (Nepal Ministry of Communications, 2021).

However, challenges remain. The availability of affordable smartphones and reliable internet connectivity is still an obstacle in many rural areas, and the government's policies often lack a gender-sensitive approach to address the specific needs of women (Sharma & Thapa, 2021). NGOs have played an essential role in bridging the gap by organizing digital literacy programs and providing training on mobile usage for women in rural areas. For instance, organizations like Women in Technology Nepal and Practical Action Nepal have implemented projects aimed at empowering women through technology by offering training, access to mobile phones, and fostering entrepreneurship through digital tools (Practical Action Nepal, 2020). These initiatives are critical, but they also face challenges such as limited funding, cultural resistance, and low mobile literacy among women.

Thus, while there are ongoing efforts to reduce the digital divide in Nepal, especially in the context of gender equality, substantial work remains to ensure that digital inclusion is truly accessible to all. Addressing the digital divide in Nepal requires a multifaceted approach that involves improving infrastructure, enhancing digital literacy, and implementing policies that target both technological access and social norms that restrict women's participation in the digital world.

Studies on Women's Economic Empowerment

Women's economic empowerment (WEE) has emerged as a critical focus of development studies in recent years, as scholars and policymakers alike acknowledge its profound impact on poverty alleviation, sustainable development, and gender equality. Women's economic participation, particularly in rural areas, is often seen as a means of enhancing household welfare and social mobility. Research from various countries, including India, Kenya, and other parts of the world, illustrates how economic women's roles in sectors like agriculture, financial services, and entrepreneurship have been central to achieving empowerment.

In many developing countries, agriculture remains a key sector where women's involvement is both vast and essential. In India, women account for a significant portion of agricultural labor, with estimates suggesting that approximately 70% of rural women are engaged in agriculture-related work (Chowdhury & Ghosh, 2016). Despite their high involvement, women often lack control over the land, capital, and technology that would enable them to increase agricultural productivity and generate higher income. Agarwal (2018) emphasizes that rural women in India typically work on land owned by male family members, limiting their access to decision-making processes and resources. This lack of control over productive resources makes it difficult for women to engage in sustainable agricultural practices that could provide long-term economic benefits. Furthermore, women's roles in agriculture are often undervalued, with their labor being classified as unpaid family labor rather than formal employment. This structural inequality impedes women's ability to benefit from advances in agricultural technology and access to markets.

Similarly, in Kenya, the agricultural sector is a vital part of the economy, and women play an integral role in food production and agricultural labor. However, Nzioki et al. (2018) argue that despite their significant contributions, women in Kenya face numerous barriers, including limited access to land ownership, credit, and agricultural extension services. This lack of access to land has been identified as one of the primary constraints to women's agricultural productivity. Additionally, Mwangi (2020) highlights that women in rural Kenya are often excluded from leadership roles in agricultural cooperatives, which further limits their ability to influence the distribution of resources and benefits. This marginalization has a direct impact on their economic empowerment, as it prevents them from accessing the full range of resources needed to improve agricultural output and generate income.

In both India and Kenya, there has been growing recognition of the need to promote women's access to land and agricultural resources to foster economic empowerment. Initiatives such as land reforms, access to credit, and gender-sensitive agricultural training have shown promise in improving the livelihoods of women in rural areas. However, these initiatives are often insufficient to address the deep-rooted gender inequalities that hinder women's full participation in agricultural development. Therefore, while agricultural programs can provide economic opportunities for women, they must be complemented by broader social and cultural efforts to challenge the norms that restrict women's roles in agriculture.

Access to financial services is another key aspect of women's economic empowerment, as it enables women to manage their own finances, invest in businesses, and improve household welfare. In countries like India, where financial exclusion has historically been a barrier to women economic mobility, microfinance programs have become a cornerstone of empowerment. Microfinance, through mechanisms such as self-help groups (SHGs) and micro-credit loans, has enabled rural women to gain access to capital that would otherwise be unavailable to them through traditional banking systems. Agarwal (2018) notes that microfinance has significantly improved women's ability to start or expand small businesses, leading to greater financial independence and household decision-making power.

In Kenya, the introduction of mobile banking services like M-Pesa has transformed women's access to financial services. Morawczynski (2017) highlights that M-Pesa, a mobile money platform, has played a pivotal role in enhancing financial inclusion, especially for rural women. Women, who once had to travel long distances to reach the nearest bank, now have the ability to send and receive money, pay bills, and save directly from their mobile phones. This innovation has greatly reduced barriers to financial inclusion, enabling women to engage in entrepreneurial activities and contribute to their families' income.

While mobile money and microfinance have brought about significant improvements in women's access to financial services, they are not without their limitations. For instance, women's limited access to business skills training and market linkages can prevent them from fully capitalizing on the financial resources available to them. Kumar and Kumar (2017) argue that women entrepreneurs in India, particularly in rural areas, often engage in low-capital, low-return businesses that restrict their economic mobility. These businesses, while providing income, tend to be small-scale and lack the potential for growth. Therefore, enhancing women's financial independence requires not only improving access to financial services but also providing the necessary skills and networks that allow them to grow their businesses and increase their economic power.

Women engagement in entrepreneurship is another crucial aspect of economic empowerment. Entrepreneurial activities not only provide women with economic independence but also allow them to gain greater decision-making power within households and communities. In India, Kumar and Kumar (2017) found that rural women entrepreneurs, though often faced with challenges such as limited access to finance, education, and social capital, had improved

their financial standing by starting small businesses in sectors such as agriculture, food processing, and handicrafts. These enterprises, though often small in scale, contributed significantly to household income and social status.

In Kenya, Mwangi (2020) found that women entrepreneurs often face challenges related to social resistance, especially in rural communities where traditional gender roles are strongly entrenched. Women's participation in business is sometimes seen as a threat to male authority, and they face discrimination both from within the household and in the public sphere. Despite these challenges, the research found that women who successfully ran businesses enjoyed greater social status and financial autonomy. However, the study also emphasized the need for more robust support systems, including business development services, access to markets, and training in entrepreneurial skills, to help women overcome the structural challenges they face in entrepreneurship.

In both India and Kenya, while women's participation in entrepreneurship has shown positive outcomes, the barriers they face — such as lack of access to credit, gender-based discrimination, and limited business networks — highlight the need for comprehensive policies that not only promote entrepreneurship but also address the socio-cultural factors that limit women's participation in economic activities.

Economic Empowerment in Nepal

Nepal is no exception to the global trend of women's economic disempowerment, particularly in rural areas, where gender norms, socio-cultural barriers, and limited access to resources have traditionally constrained women's participation in the economy. However, in recent years, there has been a growing body of empirical research that examines the barriers to women's economic empowerment in Nepal and the ways in which these barriers can be overcome. Research by both Nepalese and international scholars has highlighted several key areas in which interventions can have a positive impact on women's economic status, particularly in rural areas.

Research on women's economic empowerment in Nepal has often focused on rural women's involvement in agriculture, microfinance, and entrepreneurship. In their study, Bista and Gurung (2017) explored how rural women in Nepal face structural barriers to economic empowerment due to their limited access to land, credit, and education. The study found that rural women in marginalized communities, such as the Dalit and Indigenous populations,

experience higher levels of economic empowerment disempowerment due to deep-rooted social exclusion and gender inequality. In particular, the lack of land rights and economic autonomy restricts their ability to generate income and accumulate wealth. Moreover, women's traditional roles in caregiving and household management often prevent them from engaging in income-generating activities.

Further, Adhikari and Sharma (2020) conducted a study on women's participation in agriculture in rural Nepal, focusing on how access to agricultural training and resources can increase women's economic productivity. Their research found that programs aimed at providing women with training in agricultural techniques, as well as access to inputs like seeds, fertilizers, and technology, significantly improved women's productivity and income levels. However, the researchers also noted that these interventions were often limited by the social and cultural expectations placed on women, particularly in terms of their household responsibilities. As a result, while training and resource access could improve women's economic outcomes, these changes were constrained by women's gendered roles in the family.

The introduction of mobile technology has been seen as a potential game-changer for women's empowerment in Nepal. As in many other parts of the world, mobile phones have become an essential tool for communication, information access, and financial services. Research by Shrestha and Karki (2021) explored how mobile technology has empowered rural women by improving their access to financial services and business opportunities. Through mobile banking, women in rural Nepal have been able to access savings accounts, microcredit, and payment systems, enabling them to manage their finances and engage in small-scale businesses.

Moreover, Adhikari et al. (2022) examined how mobile-based learning platforms have empowered women in Nepal by providing them with access to entrepreneurship training, financial literacy, and agricultural knowledge. These mobile-based programs have helped women improve their skills, increase productivity, and expand their businesses. The study found that mobile phones provided women with the flexibility to access training and information from the comfort of their homes, overcoming the geographical and social barriers that often limit women's access to education and resources.

Overall, the growing body of empirical research on women's economic empowerment in Nepal suggests that while significant progress has been made, there are still substantial challenges that need to be addressed. The role of mobile technology in empowering rural women has been especially notable, as it has facilitated access to financial services and education. However, for women to truly achieve economic empowerment, these technological interventions must be coupled with broader social, political, and economic reforms that promote gender equality and challenge the patriarchal norms that continue to limit women's opportunities for full participation in the economy.

2.3 Theories, Concepts and Terminologies Relevant to The Study

2.3.1 Digital Divide

The digital divide is a term used to describe the disparity in access to and use of digital technologies between different groups in society, particularly the internet, mobile phones, and computers. The concept encompasses a range of factors, including access to technology, digital literacy, and skills that influence how individuals and communities engage with modern digital tools (Van Dijk, 2006). This divide is often influenced by socioeconomic inequality, where people from lower-income groups, rural areas, and developing countries face significant barriers in accessing and using technology (Kozma, 2003). As society becomes more digitized, the digital divide increasingly manifests as a major source of economic exclusion, social inequality, and limited participation in essential sectors such as education, health, and politics (Souto-Otero, 2018). From a sociological perspective, the digital divide is not just about access to technology but also about who controls technology, how technology is used, and what prevent certain groups from using it effectively (Hargittai, 2010).

The digital divide is fundamentally structural, reflecting broader social inequalities that exist within societies (Norris, 2001). These inequalities are often shaped by geographic location, gender, income, and educational attainment. For example, rural areas often lack the infrastructure required for high-speed internet or have limited access to affordable digital devices, which hinders their engagement with the digital world (Heeks, 2002). In developing countries, this problem is more pronounced due to economic disparities, which limit the ability of individuals in poverty-stricken areas to access the technology needed to engage in the digital economy (Graham & Dutton, 2014). Within countries, the digital divide also exists

between urban and rural populations, where urban residents typically have better access to digital tools and high-speed internet services compared to those living in remote areas (Zickuhr & Smith, 2012). These geographical disparities highlight the role of social inequalities in determining access to technology.

In many developing countries, gender significantly compounds the digital divide. Women in rural areas are often the most disadvantaged when it comes to both access to and usage of digital technologies. Societal norms and gendered roles often restrict women's access to technology, particularly mobile phones and the internet. In cultures where women are expected to prioritize domestic responsibilities over economic or educational pursuits, technology may be seen as unnecessary or even inappropriate for them (Choudhury, 2017). Furthermore, men typically control household finances and decisions regarding technology purchases, further marginalizing women's access to devices (Miller, 2012). In Nepal, India, and other South Asian countries, gendered digital technologies. divides reflect broader patterns of social exclusion that prevent women from fully engaging with mobile phones for business, education, or financial inclusion (Miller et al., 2014). Thus, the digital divide is not simply an issue of access to technology but also a matter of gendered power dynamics that restrict women's autonomy and opportunities for economic empowerment (Gillwald & Moyo, 2015).

Digital literacy, a key component of the digital divide, is another significant factor. Digital literacy refers to an individual's ability to effectively use digital technologies to access, analyze, and create information. Without digital literacy, even those with access to technology may be unable to fully utilize it. The skills gap is particularly acute in rural areas and low-income communities, where there may be fewer opportunities for formal education or digital training. In Nepal, for instance, despite rising mobile phone penetration, the lack of digital skills among rural women significantly limits their ability to mobile leverage technology for economic activities, such as mobile banking, market access, or entrepreneurship (Dighe, 2016). This limitation is compounded by the gender gap in education, where women in rural areas are less likely to have received formal education or training in digital skills (Rahman, 2014). Therefore, digital literacy becomes not only a matter of technological access but also a social issue deeply connected to educational inequality and gender discrimination.

The economic divide in access to technology also plays a crucial role in the digital divide. In developing countries, the high cost of smartphones, computers, and internet services can be prohibitive for low-income populations, particularly in rural areas where income levels are lower (Graham, 2014). Although mobile phones have become more affordable in many parts of the world, access to smartphones with internet capabilities is still limited by both socioeconomic status and geographic location (Lloyd & Robinson, 2016). This gap is also exacerbated by the cost of internet data and the reliability of networks, which can make consistent access difficult in rural areas. Therefore, while mobile phones have become widespread, they are often used for basic communication rather than accessing advanced services such as mobile banking, education, or online health services.

Moreover, the gendered nature of the digital divide emphasizes how cultural barriers limit women's engagement with technology. In many societies, patriarchal norms restrict women's mobility and access to public resources, including education, technology, and financial resources (Gurumurthy, 2011). This pattern reinforces women's exclusion from the digital economy and perpetuates gender inequality. For example, mobile phones have become crucial for rural women's economic participation in agriculture, entrepreneurship, and financial inclusion, yet their ability to fully utilize mobile phones is constrained by social norms and economic factors. In societies with strong gender roles, male dominance over resources such as technology and finance limits women's agency and economic empowerment (Vyas, 2016).

The digital divide also reflects broader trends of social exclusion and marginalization in society. As digital technologies become increasingly essential for participation in modern economies, those excluded from access to these technologies face the risk of being left behind. This exclusion affects a person's ability to participate in political discourse, access healthcare, engage in education, and secure employment opportunities, thus perpetuating a cycle of poverty and social isolation (Robinson & Broadbent, 2016). In democracies, this exclusion can undermine the democratic process itself, as individuals without access to digital platforms may be unable to participate in civic life, vote, or engage in political discussions (Lustig, 2017).

Gender is one of the most significant factors in the digital divide, and addressing the gendered digital divide is crucial for ensuring equal opportunities for both men and women, particularly in developing countries. Research has consistently shown that women have more

limited access to technology compared to men, especially in rural areas, where cultural norms, economic barriers, and social attitudes limit their ability to use technology effectively. Bridging the digital divide in this context requires more than just expanding access to technology; it involves addressing gender inequality, educational disparities, and economic challenges to ensure that women can use digital technologies to improve their economic, social, and political standing (Souter et al., 2011).

In conclusion, the digital divide is a multifaceted issue that reflects the social inequalities in society. It is not just about access to technology but also about the power dynamics that determine who controls and benefits from digital tools. The divide is gendered, economic, and geographically specific, and its consequences are far-reaching in terms of economic empowerment, education, and social participation. Addressing the digital divide requires not only improving access to digital technologies but also addressing the structural inequalities that prevent marginalized groups, particularly women, from fully benefiting from the digital world (Eubanks, 2018). Bridging the digital divide is crucial for ensuring social inclusion, economic development, and gender equality in the digital age.

2.3.2 Economic Empowerment

Economic empowerment refers to the process by which an individual or community gains control over their economic resources and decisions, thereby enabling them to improve their socioeconomic situation. From a sociological perspective, economic empowerment is not only about financial independence, but also about the broader ability to access, control and use resources to achieve greater autonomy and influence in society. Economic empowerment is broadly understood as the ability of individuals, especially marginalized groups, to participate in, contribute to, and benefit from economic activities, conditional on the recognition of the value of their contributions and respect for their dignity (Kabeer, 2012). It involves increased access to productive resources, control over income, and decision-making power within households and communities.

Recent literature has expanded the scope of economic empowerment beyond income generation to include financial inclusion, entrepreneurship, and digital access. For example, Cornwall and Rivas (2015) emphasize that empowerment must be situated in a broader social and institutional context, noting that economic interventions alone may not dismantle gender power relations unless accompanied by normative and structural transformations. In

developing countries, especially among rural women, economic empowerment is often constrained by structural inequalities, such as limited education, lack of property rights, and restricted mobility (Sida, 2021). However, the spread of digital technologies—especially mobile phones—has begun to reshape these dynamics. Aker and Blumenstock (2020) argue that mobile connectivity can facilitate economic empowerment by bridging information gaps, providing financial services (e.g., mobile banking), and opening up new markets for women entrepreneurs. Furthermore, Duflo (2012) highlights the bidirectional relationship between women’s empowerment and development. While economic development can contribute to empowerment, empowered women are themselves key drivers of broader development outcomes, suggesting a virtuous cycle. Importantly, economic empowerment is not a uniform process; it varies across contexts, cultures, and individual agencies. Rowlands (1997) distinguishes between different dimensions of power—“intrapersonal power,” “power over,” and “power over”—which are critical to understanding how economic empowerment is negotiated at the micro level. This view is echoed in recent ethnographic research (e.g., Rao & Kelleher, 2005), which highlights the importance of voice, assertiveness, and collective action in empowerment processes. Scholars such as Mayoux (2017) have advocated for participatory approaches to empowerment, arguing that externally imposed models often fail to capture the lived realities and aspirations of marginalized women. This suggests that qualitative, bottom-up research (such as interviews and ethnography) is important in capturing nuanced and context-specific pathways to economic empowerment.

Sociologists often argue that economic empowerment is fundamentally related to the concept of agency - agency is the ability to make choices and take actions to affect one's economic well-being. For individuals to be economically empowered, they must be able to make informed decisions about how to use available resources, how to participate in economic activities, and how to navigate economic systems that may marginalize or exclude them. In this sense, economic empowerment is also closely related to the development of human capital, which includes skills, education, and networks for participation in economic activities. For example, access to education and vocational training can provide individuals with the skills needed to engage in a variety of economic activities, whether in formal employment, entrepreneurship, or the informal economy (Sen, 1999). Economic empowerment also involves control over financial resources, including access to credit, savings, and investment opportunities. Such control can facilitate individuals' ability to invest in their own businesses, expand economic activities, and improve their overall living standards (World Bank, 2002).

An important aspect of economic empowerment that sociologists emphasize is the role of social structures and institutions in promoting or hindering economic autonomy. In many societies, social inequalities (such as class, gender, ethnicity, and geography) largely determine access to economic resources. These inequalities often lead to systemic barriers that prevent certain groups from achieving economic empowerment. For example, women in patriarchal societies may have difficulty accessing economic resources such as land, credit, or education, which limits their ability to participate in the formal economy or achieve economic independence (Elson, 1995). Similarly, marginalized racial and ethnic groups may face discrimination in the labor market, limiting their opportunities for employment and income generation (Baker, 2012). These structural barriers must be addressed to achieve true economic empowerment, as they often reinforce cycles of poverty and social exclusion. Economic empowerment must therefore not be viewed solely as an individual achievement, but rather as a collective process that involves the transformation of social systems and institutions to promote equal access to economic opportunities (Cornwall, 2007).

Economic empowerment is also closely related to the concept of financial independence, which refers to the ability of individuals (especially women and other marginalized groups) to make their own economic decisions without relying on others (such as husbands, family members, or employers). Financial independence is an important aspect of women's economic empowerment because it enables them to take control of their lives and make decisions about their own health, education, and well-being (Duflo, 2012). For women, the ability to generate their own income is often seen as a key factor in improving their social status and reducing gender inequality. However, achieving financial independence is not always easy, as women in many societies face cultural and economic barriers that limit their access to income-generating opportunities (Kabeer, 1999). These barriers include limited educational opportunities, cultural norms that restrict women's participation in the labor force, and legal and institutional frameworks that limit women's property rights or access to credit. Therefore, efforts to promote women's economic empowerment must address these barriers and create an enabling environment that allows women to fully participate in economic activities (Mayoux, 2006).

A key aspect of economic empowerment is access to financial resources, which enables individuals to invest in their livelihoods, start businesses, and obtain services that improve their quality of life. For many marginalized groups, especially in developing countries, access

to finance is a major barrier to economic empowerment. Microfinance programs have become one of the most important tools for promoting economic empowerment, especially for women in low-income communities. Microfinance institutions provide small loans, savings, and insurance services to individuals who may not have access to the traditional banking system. These services enable individuals to start or expand small businesses, improve their economic security, and contribute to community development (Yunus, 2003). Microfinance is particularly effective in empowering women because it provides them with the financial resources to start their own businesses and gain greater control over their economic future (Pitt & Khandker, 1998). However, despite the positive impact microfinance has had on many individuals and communities, it is not a panacea, and it is important to recognize the limitations and challenges of microfinance programs, such as high interest rates and debt risks (Cheston & Kuhn, 2002).

Economic empowerment is also closely related to the concept of social capital, which refers to the network of relationships and social connections that individuals can draw on to access resources, opportunities, and support. Social capital plays a vital role in promoting economic empowerment because individuals with strong social networks are more likely to have access to employment opportunities, financial resources, and information about economic activities (Putnam, 2000). In many communities, social networks act as informal support systems that enable individuals to cope with economic challenges and gain access to resources that would otherwise be inaccessible. For example, rural women may rely on social networks to share information about market prices, business opportunities, and financial resources (Huang & Dasgupta, 2016). In some cases, these networks also provide collective support for entrepreneurship, where individuals pool resources and skills to start small businesses or engage in collective economic activities. The strength of social capital varies across groups, and marginalized communities may have weaker social networks due to isolation, discrimination, or exclusion from mainstream economic and social systems. Therefore, cultivating social capital and strengthening community networks are key strategies for promoting economic empowerment, especially in rural or marginalized areas (Narayan & Cassidy, 2001).

A core aspect of economic empowerment is the ability to influence economic policies and decisions that affect people's lives. This aspect of empowerment is particularly important for groups that have historically been excluded from decision-making processes, such as women,

indigenous communities, and low-income people. Political empowerment—the ability to participate in and influence the political process—is closely related to economic empowerment because political decisions often have significant economic consequences. For example, policies related to labor rights, land ownership, access to credit, and social welfare directly affect individuals’ economic opportunities and well-being (Schultz, 1993). In many societies, marginalized groups face significant barriers to political participation, such as lack of access to information, limited political representation, and legal or cultural restrictions. Therefore, efforts to promote economic empowerment must also include strategies to strengthen political participation and representation, ensuring that marginalized groups have a voice in shaping policies that affect their economic future (Moser, 1993).

Economic empowerment also involves a shift in power relations within families and communities. In patriarchal societies, women often lack decision-making power within the family, especially over financial matters. Economic empowerment enables women to challenge traditional gender roles and gain greater control over their lives and resources. For example, women who control their own income are more likely to make decisions about their own health, education, and the well-being of their children (Duflo, 2012). Furthermore, economic empowerment can lead to changes in community dynamics, as empowered individuals are more likely to participate in community decision-making, contribute to social development, and challenge social norms that create inequality. Therefore, the process of empowering women and other marginalized groups has a broader social impact, as it can lead to more equitable and inclusive societies (Kabeer, 2005).

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2.4 Bridging the digital divide for economic empowerment

The digital divide is a critical issue that impacts the ability of individuals and communities to fully participate in the global economy. For women in rural districts such as Sindhupalchowk, Nepal, this divide is not simply an issue of technology access, but a reflection of deeper socioeconomic inequalities. While the spread of mobile technology has opened up new opportunities for economic empowerment, the divide between those who can use digital tools and those who cannot remains a major challenge. The unequal distribution of technology, particularly in rural areas, is exacerbated by gender disparities, further limiting the potential for rural women to benefit from digital advancements. Bridging this divide is therefore key to ensuring that women are able to use mobile technology for economic development, education, and personal empowerment. This section explores the impact of the digital divide on economic empowerment, highlights gaps in the current literature, and discusses the potential impact of addressing these gaps on women's empowerment in the Sindhupalchowk district.

2.4.1 Impact of the digital divide on economic empowerment

The digital divide, which refers to the gap between those who can use digital technology and those who cannot, has significant implications for economic empowerment, particularly for marginalized groups such as rural women. While access to technology has been shown to

improve economic outcomes in many parts of the world, a lack of technology can reinforce cycles of poverty, limit economic mobility, and exacerbate existing gender and socioeconomic disparities. In rural areas, where women often face multiple forms of exclusion—whether due to geographic isolation, cultural norms, or limited access to education—the digital divide becomes a major barrier to economic participation and independence.

One of the most profound impacts of the digital divide on economic empowerment is the exclusion of rural women from financial services. Without access to mobile phones and the internet, rural women are often unable to participate in the growing digital economy, which includes services such as mobile banking, mobile payments, and online transactions. The lack of financial inclusion puts women at a disadvantage because they are unable to effectively manage their finances, access credit, or engage in entrepreneurial activities that rely on digital tools. For example, mobile phones are essential for women to obtain microcredit, make digital payments, and engage in e-commerce, but without access to this technology, women remain unable to access these opportunities.

The digital divide also limits women's access to information and markets. In farming communities, where a large portion of rural women's work is focused on agriculture, digital tools have the potential to provide real-time weather updates, market prices, and farming advice. However, women who lack access to mobile phones or the internet miss out on these valuable resources that could increase their productivity and income. In areas such as Sindhupalchok, where agriculture is a primary livelihood, having access to mobile applications that provide agricultural guidance or connect women to buyers and sellers is critical. Without digital access, rural women continue to operate their businesses with limited information, which often leads to suboptimal agricultural practices and low financial returns.

This gap also limits women's ability to participate in formal or informal labor markets. Mobile technology has opened up new avenues for remote work, freelancing, and entrepreneurship, but without access to mobile phones and the internet, women are unable to access these growing opportunities. E-commerce in particular has given women the ability to market their products, enter new markets, and engage in trade outside their local communities. However, if they lack the tools to do so, they remain confined to local markets, opportunities may be more limited, and they are less likely to earn adequate income.

Furthermore, the digital divide also affects women's access to education. Many educational resources, such as online courses, skill-building apps, and vocational training programs, are increasingly being delivered through mobile technology. For rural women, especially those who are disadvantaged due to gender and geography, lack of access to these resources further limits their opportunities to improve their skills and enhance their employability. This reinforces the vicious cycle of poverty and limits women's ability to fully participate in economic activities.

2.4.2 Gaps in the current literature and research gaps

While the role of mobile phones in economic empowerment has been extensively studied in many parts of the world, there are still major gaps in the literature, especially in rural Nepal. Most of the existing research focuses on urban populations or treats rural women as a homogenous group without considering the nuances of their specific challenges and needs. Research on mobile phone use in rural Nepal tends to focus on issues such as mobile phone penetration, network coverage, and basic accessibility, but pays less attention to the deeper socio-cultural and economic barriers that prevent women from fully utilizing mobile technology.

A key gap in the literature is the lack of research that specifically examines the relationship between gender, technology, and rural economic empowerment in Nepal. While there have been a number of studies on the digital divide, few have examined how gendered mobile phone use affects economic outcomes for women in rural communities. This is a critical area of research because rural women in Nepal face specific cultural and social barriers that impact their ability to access and use technology. For example, gender norms often dictate that men control household resources, including mobile phones, which limits women's ability to use them for financial or business purposes. Additionally, rural women's lack of digital literacy, coupled with their limited access to education, makes it more difficult for them to engage with mobile technology in a meaningful way.

Another research gap is the lack of longitudinal studies tracking the impact of mobile technology on rural women's economic empowerment. While some studies provide a snapshot of mobile phone use in rural areas, few studies investigate the long-term impact of mobile technology on women's income, entrepreneurship, and overall economic well-being. Such studies are critical to understanding the true potential of mobile phones as a tool for

economic empowerment and to inform policy interventions aimed at bridging the digital divide.

Additionally, there is a lack of research examining the role of government and non-government initiatives in bridging the digital divide for rural women. While some government programs are designed to increase digital literacy and technology use, the effectiveness of these programs has not been systematically evaluated based on the needs of rural women. Research is needed to assess how government policies, such as mobile phone subsidies or initiatives to promote mobile literacy, can help close the digital divide and improve women's economic outcomes.

2.4.3 Potential impact on women's empowerment in Sindhupalchok

Addressing the digital divide in Sindhupalchok has the potential to significantly transform the economic situation of women in the region. Sindhupalchok is a predominantly rural district where many women rely on agriculture for their livelihoods and have limited access to resources such as markets, financial services, and agricultural advisories. Closing the digital divide could empower women in Sindhupalchok by providing them with the tools to improve economic opportunities and livelihoods.

First, improving mobile phone and internet access in Sindhupalchok could increase women's participation in the digital economy. Mobile phones can support women's entrepreneurial activities and increase their financial autonomy by enabling them to use mobile banking, make payments, and obtain loans. With access to financial services, women can invest in their own businesses, expand their agricultural activities, and increase their incomes. Mobile phones can also facilitate women's access to new markets, enabling them to sell their products outside their local communities and connect with buyers in urban areas and even internationally.

Second, increased cell phone use can provide women in Sindhupalchok with critical agricultural information. Through mobile apps and SMS-based services, women can receive real-time updates on weather conditions, market prices, and crop management techniques. This enables them to make informed decisions about agricultural practices that can increase productivity and reduce losses. For women who already play an important role in agricultural production, these tools could have a direct impact on their productivity and income.

Finally, bridging Sindhupalchok's digital divide could increase women's educational opportunities. With a cell phone, women can access online courses, skill-building apps, and vocational training programs that help them improve their employability and entrepreneurial skills. By acquiring new skills, women can increase their chances of finding formal employment or expanding their business, leading to greater economic independence.

In summary, addressing Sindhupalchok's digital divide has the potential to transform the economic landscape for rural women. By improving access to cell phones and the internet, women in Sindhupalchok can increase their economic autonomy, improve their productivity, and create new economic opportunities. However, to realize this potential, the unique challenges facing rural women, including cultural barriers, digital literacy issues, and limited access to resources, must be understood and addressed. Bridging the digital divide is more than just providing access to technology; it also means ensuring that women have the skills, knowledge and resources they need to take advantage of technology.

2.5 Research Gap: Identification of Gaps

Despite significant advancements in mobile technology and its potential to empower rural women economically, the literature on the intersection of mobile technology and economic empowerment in the context of Nepal, particularly for rural women, remains limited. This gap is crucial, as mobile technology has been identified as a transformative tool that could enhance the economic status of rural women by providing them with access to financial services, entrepreneurial opportunities, and educational resources. However, empirical research focusing specifically on rural women in Nepal, and how mobile technology can be leveraged for their economic empowerment, is scarce.

Limited Research on Mobile Technology and Economic Empowerment of Rural Women in Nepal

The economic empowerment of rural women in Nepal has been a focal point for scholars interested in gender equality, poverty alleviation, and sustainable development. However, the specific role that mobile technology plays in the economic empowerment of these women remains largely unexplored. While there are studies that touch upon women's access to technology, they often fail to adequately analyze the direct impact of mobile phone usage on women's economic status.

For instance, research by Adhikari and Sharma (2020) provide some insights into the

challenges and barriers women face in accessing financial services and information in rural Nepal, but it does not explore how mobile phones could potentially alleviate these barriers. Similarly, Bista and Gurung (2017) discuss women's economic empowerment in rural Nepal but do not consider the role that mobile technology plays in overcoming traditional gender barriers and opening up new economic opportunities for women.

The current body of literature suggests that mobile phones can play a pivotal role in providing women with access to information, markets, and financial services (Shrestha & Karki, 2021), but there is still a lack of empirical data on how these opportunities translate into tangible economic empowerment. For example, mobile banking services such as M-Pesa have been shown to increase financial inclusion for women in countries like Kenya (Morawczynski, 2017), but no comparable study has been conducted to assess the impact of similar services in rural areas Nepal.

The gap in research becomes even more evident when considering that the economic activities of rural women in Nepal are often fragmented and informal. Studies on women's entrepreneurial activities have largely focused on traditional sectors, such as agriculture or handicrafts, but have not systematically examined how mobile technology can support rural women's access to new business ventures, market opportunities, and financial resources. Therefore, there is a need for more focused and comprehensive research on the role of mobile technology in expanding economic opportunities for women, especially in rural and marginalized communities in Nepal.

Lack of Integrated Analysis of the Digital Divide and Economic Empowerment

Another major gap in the literature is the lack of a comprehensive analysis that connects the concept of the digital divide with economic empowerment for rural women in Nepal. The digital divide, defined as the gap between those who have access to modern information technologies and those who do not, is a significant barrier to economic growth and social equity (Van Dijk, 2020). While much research has been conducted globally on the digital divide, there is a lack of studies that explicitly focus on how this divide intersects with gender inequalities, particularly in the context of Nepalese rural women.

The existing studies on the digital divide in Nepal often focus on general access to

technology or internet connectivity, without considering how gender and socioeconomic factors influence women's ability to benefit from mobile technology. Gurung and Sharma (2021) discuss the digital divide in the broader South Asian context but do not address the ways in which gender disparities in mobile phone access could exacerbate existing inequalities in economic empowerment. The lack of gender-sensitive analyzes leaves an important gap in understanding how mobile economic technology can either bridge or deepen the divide between women and men in rural areas, particularly in terms of opportunities.

In Nepal, rural women often face challenges such as low literacy rates, lack of education, social isolation, and cultural barriers, which may impede their ability to effectively utilize mobile technology for economic empowerment. Research examining the intersections of the digital divide, gender, and economic empowerment is critical to understanding whether mobile technology can serve as a leveling tool for women or if it might inadvertently widen the gender gap by excluding those who are already disadvantaged.

Absence of Systematic Surveys on Mobile Usage and Women's Economic Status

Another important research gap is the absence of systematic surveys and longitudinal studies that explore the impact of mobile phone usage on the economic status of rural women in Nepal. While mobile phones have been widely adopted in urban areas of Nepal, rural women still face significant barriers to accessing and utilizing mobile technology in a way that could translate into tangible economic benefits. These barriers may include factors such as limited network coverage, lack of training in mobile phone use, cultural restrictions on women's mobility and access to technology, and gender biases in household decision-making.

The existing research often lacks the depth required to explore how mobile phone usage affects various dimensions of women's economic status, such as income generation, business ownership, financial management, and market access. Without comprehensive surveys that focus specifically on rural women, it is difficult to assess the true impact of mobile technology on their economic empowerment. For example, while mobile money platforms have been shown to improve women's financial inclusion (Bista & Gurung, 2017), little is known about how these platforms affect women's decision-making autonomy, control over household finances, or participation in economic activities.

The lack of systematic surveys means that much of the existing knowledge about the relationship between mobile technology and economic empowerment remains anecdotal or

based on small-scale studies. Longitudinal studies are needed to track the effects of mobile phone usage over time and to understand how this tool can contribute to lasting improvements in women's economic well-being.

Additionally, few studies have addressed how mobile phones can influence women's access to formal financial services such as bank loans, insurance, and credit. In rural Nepal, women often face systemic barriers to accessing these services, and mobile technology might provide a pathway for overcoming these barriers. However, a more thorough investigation is needed to explore the direct and indirect impacts of mobile phone usage on rural women's financial decision-making and economic empowerment.

Justification for This Study

The necessity of this study stems from the existing gaps in the literature on mobile technology and its role in the economic empowerment of rural women, particularly in the context of Nepal. While there is substantial research on the digital divide, mobile technology, and gender inequality, the specific relationship between mobile technology usage and economic empowerment for rural women in Nepal has yet to be systematically explored. Existing studies tend to focus on individual aspects of either gender inequality or technological access, but they fail to address how these factors interact and contribute to tangible economic changes for women in rural communities. This study aims to fill these gaps by providing a nuanced understanding of how mobile technology can both empower and constrain rural women's economic roles in Nepal, exploring both the opportunities and limitations it presents.

As mentioned earlier, there is a lack of comprehensive research that specifically explores the connection between mobile phone usage and economic empowerment for rural women in Nepal. While mobile technology has the potential to provide rural women with greater access to financial services, entrepreneurial opportunities, and market access, the existing research has yet to adequately measure the impact of mobile technology on women's economic status in rural areas. This research gap is particularly concerning given that mobile phones have become a crucial tool in modern economic activities, especially in rural and developing countries like Nepal, where access to traditional infrastructure and services is limited.

This study seeks to address this gap by investigating the direct and indirect effects of mobile phone usage on the economic well-being of rural women in Nepal. By focusing on rural

women's engagement with mobile technology, the study not only examines the opportunities it offers but also the barriers they face in using mobile phones to improve their economic situation. For example, rural women in Nepal often encounter cultural barriers, low literacy rates, and limited technical skills, which may hinder their ability to fully benefit from mobile technology. Thus, this study explores these challenges while identifying ways to overcome them, contributing to a more inclusive and empowering framework for rural women's economic participation.

The role of mobile technology in economic empowerment is a multifaceted issue, encompassing various aspects such as financial inclusion, entrepreneurial activities, and market participation. Rural women in Nepal, particularly those in remote areas, often lack access to formal financial services like banking, credit, and insurance, which are vital for economic mobility and sustainability. Mobile banking platforms, such as eSewa and Prabhu Pay, have the potential to bridge this gap, offering women access to financial services and digital transactions that can improve their economic independence. However, it is unclear whether the use of these mobile platforms leads to long-term empowerment or whether the digital divide prevents many women from accessing these benefits.

Additionally, mobile technology could enhance women's access to markets, enabling them to sell products or services online, access information about fair prices, and even engage in new business ventures. However, it is essential to understand how rural women in Nepal perceive these opportunities, and whether they are able to leverage mobile technology to transform their economic roles. This research fills this critical gap by analyzing how rural women utilize mobile phones for economic activities, and the extent to which these activities translate into economic empowerment.

The significance of this study is not only found in its empirical contributions but also in its innovative approach to the analysis of mobile technology and women's economic empowerment. The study proposes a new analytical framework that integrates the concepts of digital literacy, socioeconomic status, gender inequality, and economic empowerment. This framework provides a holistic view of the role of mobile phones in empowering women, accounting for the complexities of gendered access to technology and the impact that mobile usage can have on different dimensions of women's lives, from income generation to financial independence.

Additionally, the study employs a mixed-methods approach, combining qualitative interviews with quantitative surveys to gather comprehensive data. The qualitative component focuses on in-depth interviews with rural women who use mobile phones for economic purposes, exploring their personal experiences, challenges, and success stories. These interviews allow for a nuanced understanding of how mobile technology is perceived by women and how it influences their day-to-day economic activities.

The quantitative component, on the other hand, involves large-scale surveys to gather statistical data on the extent of mobile phone usage, the types of services accessed, and the correlation between mobile technology and economic outcomes. This approach allows for a systematic analysis of the impact of mobile technology on women's economic status, providing concrete evidence on how mobile phones influence women's financial inclusion, entrepreneurship, and market access.

By using this combined approach, the study aims to offer a more comprehensive understanding of the factors that enable or hinder the empowerment of rural women through mobile technology. The proposed framework and methodology provides policymakers and development organizations with valuable insights into how to maximize the benefits of mobile technology for rural women, particularly in low-resource settings.

This research is crucial for informing policy and programmatic interventions aimed at enhancing women's economic empowerment in rural Nepal. The findings are valuable for governments, NGOs, and international organizations working to promote gender equality, financial inclusion, and economic development in rural communities. By identifying the challenges and opportunities that rural women face in using mobile technology, the study helps in the design of targeted interventions that address the specific needs of this population.

For example, the study's insights into digital literacy and gendered access to technology can guide efforts to develop training programs that enhance rural women's ability to use mobile phones effectively. Moreover, the research can help design policies that provide equal access to mobile technology, ensuring that rural women are not left behind in the digital transformation that is reshaping economic opportunities worldwide. By focusing on the local context of Nepal, this study can offer context-specific solutions to bridge the digital divide and create pathways for greater economic inclusion for rural women.

In conclusion, this study is necessary due to the significant gaps in the current literature on mobile technology and economic empowerment for rural women in Nepal. By examining the role of mobile phones in empowering women economically, and by introducing a new analytical framework and methodology, the study offers novel insights into the opportunities and challenges that rural women face in leveraging mobile technology for economic advancement. The findings of this research are not only contribute to academic discourse but also inform policy development and programmatic strategies that can enhance the economic participation of rural women, ultimately contributing to gender equality and sustainable development in Nepal.

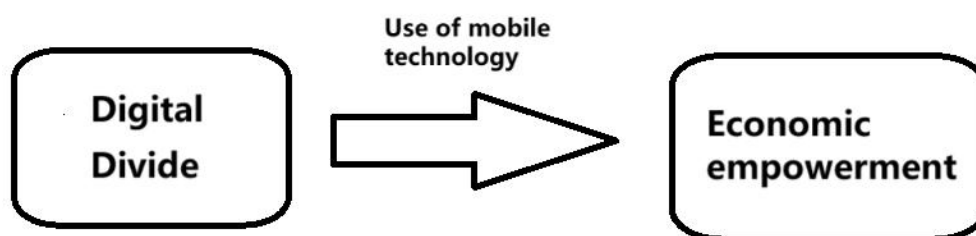


Fig.1.Digital divide and its Economic empowerment

2.6 Conceptual Framework

This section outlines the conceptual framework for this study, which aims to explore the role of mobile technology in empowering rural women economically in Nepal. The framework identifies the core concepts and their interrelationships, focusing on the digital divide, mobile technology usage, and economic empowerment as key factors influencing women's economic opportunities and well-being.

Conceptual Model

The conceptual model for this study is based on three primary variables:

Independent Variable: Digital Divide

The digital divide refers to the gap in access to and usage of mobile technology and digital services between different segments of society. In the context of this study, the digital divide is broken down into three key components:

Technology Access: Refers to the physical availability of mobile phones and internet connectivity in rural areas.

Skills Gap: The gap in digital literacy, including women's ability to effectively use mobile phones and access digital services.

Unequal Usage: The gender disparities in the usage of mobile technology, where women may have access to mobile phones but face limitations in how they use them, often due to cultural, social, or economic constraints.

Mediator Variable: Mobile Technology Usage

Mobile technology usage encompasses the ways in which rural women use mobile phones in their daily lives, particularly in the contexts of agriculture, finance, social interactions, and entrepreneurship. Women using mobile phones for accessing agricultural advice, market prices, weather updates, and connecting with suppliers and buyers. Women using mobile phones for mobile banking, digital payments, and other financial services to increase access to credit, savings, and insurance. The role of mobile phones in connecting women to their communities, providing social support, and enabling access to information about rights and resources. Women using mobile phones for starting or growing businesses, accessing customers, marketing products, and managing finances.

Dependent Variable: Economic Empowerment

Economic empowerment in this study is defined as the ability of women to participate fully and independently in economic activities and to control economic resources. It includes three key aspects:

Increased Income: The ability of rural women to increase their income through better access to markets, financial services, and new economic opportunities facilitated by mobile technology.

Control over Resources: The extent to which women have control over economic resources, such as savings, income, and household expenditure, which can be enhanced through mobile banking and financial management.

Decision-Making Participation: The degree to which women can participate in household and community decision-making processes, which can be influenced by increased access to information and financial independence through mobile technology.

Explanation of Variables

Digital Divide (Independent Variable)

The digital divide in rural Nepal is a multifaceted issue that can hinder women's access to economic opportunities. Technology access refers to whether rural women have access to mobile phones and the internet. In many rural parts of Nepal, women may have limited access to modern mobile phones, especially smartphones that support mobile applications for finance and agriculture. The skills gap involves the challenges women face in using mobile phones for practical economic purposes, often due to low literacy levels and lack of digital training. Lastly, unequal usage refers to the cultural and social barriers that limit women's ability to fully utilize mobile phones for economic activities, as mobile phones are often controlled by male family members, thus restricting women's autonomy in accessing mobile services.

Mobile Technology Usage (Mediator Variable)

The role of mobile technology usage is central to this study. By using mobile phones in agriculture, finance, social interactions, and entrepreneurship, rural women can enhance their economic capacity. In the agriculture sector, women may use mobile phones to get information about better farming techniques, access market prices, or connect with buyers, which can help improve productivity and income. The finance aspect is vital because mobile banking allows rural women to store money safely, access credit, and receive payments for their services, thus increasing their financial independence. Social interactions through mobile phones allow women to connect with others, including family members, friends, and networks that can provide support and information about rights and opportunities. Finally, entrepreneurial activities are enhanced by mobile technology, as women can market their products online, manage their small businesses, and reach wider markets through digital platforms.

Economic Empowerment (Dependent Variable)

The ultimate goal of this study is to assess how mobile technology can contribute to economic empowerment for rural women in Nepal. Economic empowerment is measured in terms of increased income, control over resources, and participation in decision-making. By leveraging mobile technology, rural women may experience an increase in income through improved market access, the ability to engage in new business ventures, and better control over their financial resources. Control over resources refers to women's ability to make

independent financial decisions, which can be facilitated by access to mobile banking services and financial literacy. Finally, decision-making participation. involves how mobile technology influences women's ability to make decisions regarding household finances, business operations, and social activities, thus improving their overall autonomy and status within their families and communities.

Relationship Between Independent and Dependent Variables

The digital divide, as the independent variable, directly influences the economic empowerment of rural women by either enabling or constraining their access to mobile technology and digital services. When women lack access to mobile phones, digital skills, or face social and cultural barriers to mobile usage, their ability to leverage mobile technology for income generation, resource control, and decision-making is significantly reduced. Conversely, narrowing the digital divide—by improving technology access, enhancing digital literacy, and promoting equitable usage—can create conditions that enable women to use mobile phones effectively in ways that enhance their economic opportunities. Thus, the digital divide shapes the extent to which women can benefit from mobile technology, which in turn mediates their path toward economic empowerment.

Application to This Study

This conceptual framework guides the study in analyzing how mobile technology usage mediates the relationship between the digital divide and economic empowerment of rural women in Nepal. The digital divide serves as the starting point, affecting women's access to and ability to use mobile phones. literacy programs, mobile service accessibility, and policy interventions aimed at closing the digital gender gap.

Ultimately, the study shows how mobile technology can serve as an empowering tool for rural women by providing them with greater financial inclusion, market access, and social connections, thereby leading to improved economic outcomes and greater gender equality. The framework is particularly useful for policymakers and development organizations seeking to enhance women's economic participation in rural Nepal, and it highlights the importance of addressing the digital divide as a key step toward achieving sustainable and inclusive economic empowerment.

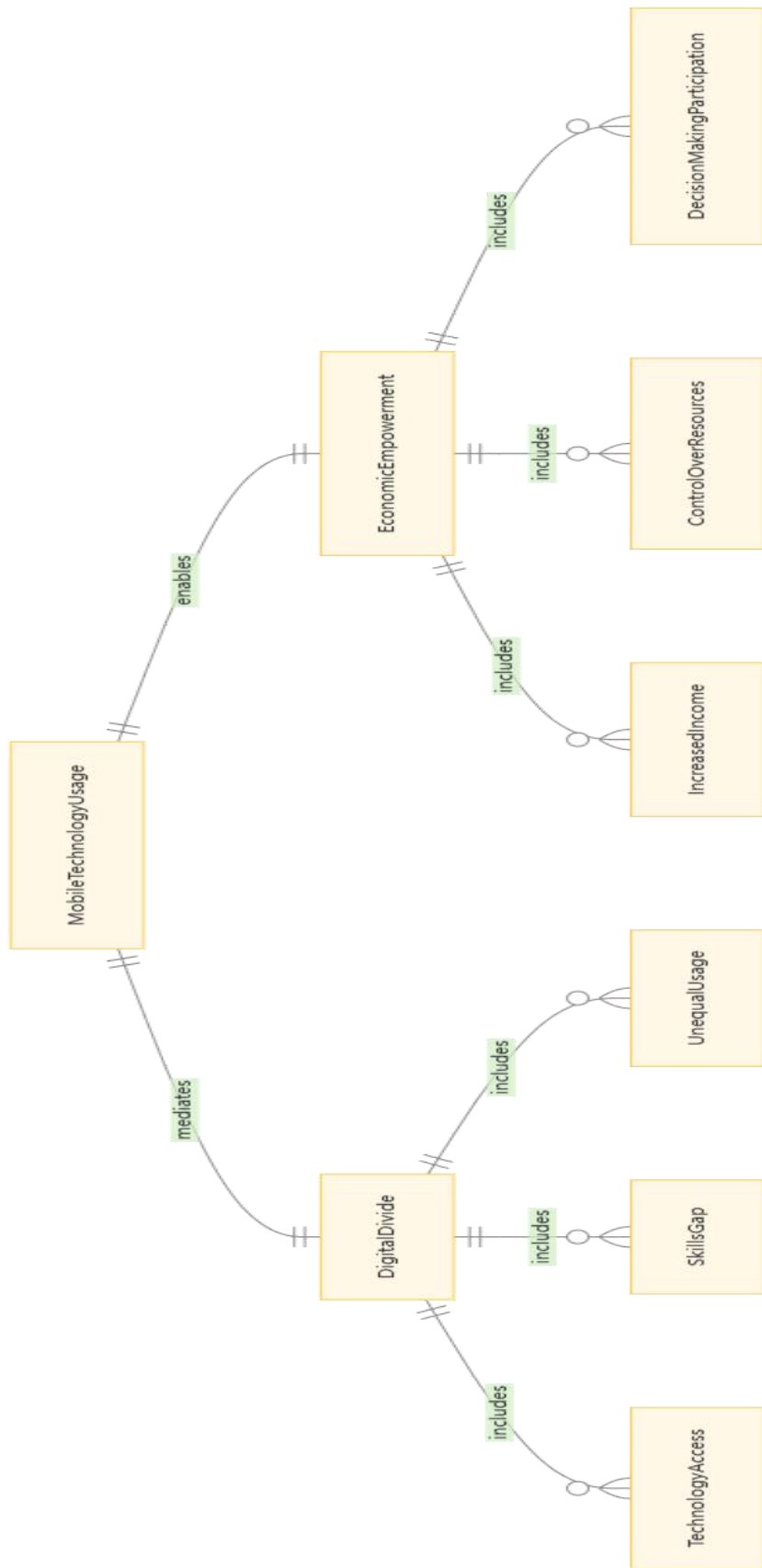


Fig.2. Conceptual Framework

Chapter 3

Methodology

3.1 Selection of the Study Area

The selection of the study area is a crucial step in any research, particularly for ethnographic studies that aim to explore the lived experiences and social realities of specific communities. For this study, the area of Sindhupalchowk in Nepal was chosen due to its significance in terms of rural poverty, gender disparities, and challenges faced by women in these regions. These districts are located in the central and hilly regions of Nepal, where access to basic services like education, healthcare, and economic resources is limited. The rural nature of these areas provides a unique context to explore the role of mobile phones in empowering women and improving their socio-economic status.

Sindhupalchowk is selected because it represents area that is heavily reliant on agriculture, with a population that largely depends on farming for their livelihood. The district also has a high poverty rate, with many households earning less than \$1.50 a day, which further intensifies the challenges faced by women in these communities (Nepal Central Bureau of Statistics,2023). Women have limited access to formal education and employment opportunities, and they are often confined to traditional domestic roles. However, mobile phone penetration has been increasing in these districts, making them ideal locations to study the impact of mobile phone technology on women's economic empowerment.

By focusing on these two districts, the study aims to provide insights into how mobile phones can serve as a tool to bridge the gender gap in economic participation and offer new opportunities for women to improve their livelihoods. The study also sheds light on the socio-cultural dynamics that shape the ways in which rural women use mobile phones and how these devices can be integrated into their daily lives to address the barriers they face in achieving economic independence.

3.2 Universe and Sampling

The universe of this study refers to the population from which the sample was drawn, specifically rural women in the Sindhupalchowk district of Nepal. This district was chosen due to its distinct socio-economic conditions and the various challenges faced by women,

making it an ideal setting for examining the relationship between mobile phone usage and economic empowerment. The primary focus of this research is on women residing in rural households, particularly those engaged in agriculture, small businesses, or other informal economic activities. These activities often define their economic contribution to their families and communities, and the mobile phone plays a pivotal role in facilitating such activities, from communication to financial transactions.

For the sampling process, a purposive sampling technique was employed. This approach is particularly effective for ethnographic studies where the goal is to gather deep insights from individuals who have direct experience with the phenomenon being studied. In this case, the study specifically targets rural women who actively use mobile phones for economic purposes. These women were selected for in-depth interviews and participation in the survey to understand how mobile phones influence their daily lives and economic activities. The sample size consists of 25 participants, with data collection continuing until the point of data saturation, meaning that no new insights or information were emerging from the interviews.

The participants were categorized based on various factors, including age, education, and occupation. These categories help to frame the analysis of how different groups of women experience mobile phone usage and its role in their economic empowerment. Below is a breakdown of these categories:

Age: The age of the participants ranged from 20 to 55 years old. This diversity in age allows for an understanding of how mobile phone usage and economic empowerment are perceived and utilized across different stages of life. Younger women may be more technologically savvy, while older women might use mobile phones for more traditional roles such as managing household finances or staying connected with family members, especially those working abroad.

Education: The education level of the participants varied, with women ranging from illiterate to those who had completed secondary or higher secondary education. Education plays a significant role in the ability to effectively use mobile phones for economic activities. Women with higher education levels may have greater access to information, skill-building opportunities, and financial literacy, while those with limited education might face challenges in using mobile phones beyond basic communication.

Occupation: The occupations of the participants varied, with women working as housewives, farmers, small business owners, laborers, and NGO workers. This diversity in occupations reflects the different ways in which mobile phones are integrated into economic activities. For example, farmers may use mobile phones to stay in contact with market vendors, small business owners may use them for customer orders, and NGO workers might rely on mobile phones for coordinating community programs.

Additionally, the study also includes insights from key informants such as local community leaders, government officials, and representatives from NGOs working on women's empowerment and technology in the Sindhupalchowk district. These informants provide valuable contextual perspectives and help broaden the understanding of the issues faced by rural women in the area, contributing to a more comprehensive analysis of how mobile phones are used and how they affect women's economic empowerment in the district.

The combination of purposive sampling of rural women and the inclusion of key informants ensures that the data collected reflects the diverse experiences and challenges faced by women in Sindhupalchowk, as well as the role that mobile phones play in addressing these challenges. This approach provides a holistic view of the socio-economic landscape and how mobile phones are used to bridge the digital divide and empower rural women. The sample for this study consists of 25 rural women from Sindhupalchowk district, purposefully selected based on their use of mobile phones for economic activities. Given the ethnic diversity of the region, participants were selected to reflect the representation of major ethnic groups in the area. The sample includes women from Tamang, Kshetri, Newar, and Brahman communities, which are among the predominant ethnic groups in Sindhupalchowk. This categorization allows the study to capture variations in cultural norms, gender roles, and access to technology that may influence women's economic participation. By including women from different ethnic backgrounds, the research ensures a more inclusive and contextual understanding of how mobile technology contributes to economic empowerment across diverse cultural settings.

3.3 Nature and Source of Data

The nature of the data collected in this study is both qualitative and quantitative. As this is an ethnographic study, the primary data is qualitative, focusing on the personal experiences, perceptions, and narratives of rural women regarding their use of mobile phones for

economic activities. This data was gathered through in-depth interviews, participant observation, and key informant interviews.

The sources of data include the following:

Primary Data:

In-depth Interviews which conducted with rural women who use mobile phones for various economic purposes. The interviews explore their motivations, challenges, and the impact of mobile phone use on their economic status. Observational Data which lead direct observations of women's use of mobile phones in their daily lives ,it provides contextual insights into how mobile phones are integrated into their routines and how they impact their economic activities. Interviews with local leaders, government officials, and NGOs involved in women's empowerment provides additional perspectives on the role of mobile phones in promoting economic development in these regions.

Secondary Data:

Published and Unpublished Articles and Books: The study draws on existing literature, including reports, articles, books, and academic research, to provide a theoretical and contextual background for the study. These sources help to frame the study within the broader discourse on women's empowerment, mobile technology, and economic development.

3.4 Research Design & Data Collection Technique

3.4.1 In-depth Interview

In-depth interviews are qualitative research methods that involve open-ended, semi-structured conversations to explore participants' experiences, perspectives, and insights on a specific topic (Kvale, 1996). In-depth interviews are the primary method of data collection in this study. These interviews are conducted with rural women who use mobile phones for economic purposes, such as agricultural activities, small businesses, or income-generating activities. The aim is to understand how mobile phones influence their economic status, the challenges they face, and how these devices contribute to their empowerment. The interviews are semi-structured, allowing for flexibility in the conversation while ensuring that key topics are covered. The questions explore various aspects of mobile phone use, including frequency, purpose, challenges, and perceived benefits. The data from these interviews are analyzed to

identify common themes and patterns across the experiences of the women interviewed.

3.4.2 Observation

Observation is a data collection technique where the researcher actively watches and records participants' behaviors and interactions in their natural environment (Angrosino, 2007). Observation is an important data collection method. By observing the daily lives of rural women, the researcher can gain valuable insights into how mobile phones are used in practice. Observations focus on how women engage with mobile phones in different contexts, such as while working on the farm, in the home, or when interacting with others. This method helps to capture the nuances of mobile phone use that may not be fully articulated in interviews. The researcher pay attention to how women access information, communicate, and use mobile phones to improve their economic opportunities.

3.4.3 Key Informants Interview

Key informant interviews involve speaking with individuals who have specialized knowledge or experience related to the research topic, providing valuable insights and contextual understanding (Marshall & Rossman, 2016). Key informants, such as local community leaders, provide valuable contextual information about the role of mobile phones in rural development. These interviews help to understand the broader socio-political environment and the initiatives in place to support women's economic empowerment through technology. The perspectives of key informants complement the data gathered from rural women and offer a more holistic view of the issue being studied.

3.4.4 Reference from Published and Unpublished Articles and Books

Secondary data was collected from published and unpublished articles, books, and reports related to mobile phone technology, gender equality, and economic development. This literature provides a theoretical foundation for the study, contextualizing the findings within existing research and offering insights into how mobile phones have been used in other contexts to empower women.

3.5 Data Processing and Analysis

The data collected through in-depth interviews, observations, and key informant interviews are transcribed and coded for analysis. Qualitative data analysis methods, such as thematic analysis, is used to identify key themes, patterns, and trends in the data. The goal is to

understand the impact of mobile phone use on the economic status of rural women and to explore the factors that influence their adoption and use of mobile phones for economic activities. The data is analyzed to identify the challenges women face in using mobile phones, the benefits they derive, and the ways in which mobile phones contribute to their economic empowerment.

Quantitative data, if collected, is analyzed using statistical methods to provide additional insights into the relationship between mobile phone use and economic status. The combination of qualitative and quantitative data provides a comprehensive understanding of the research questions.

3.6 Ethical Consideration

Ethical considerations are paramount in any research study, particularly when working with vulnerable populations such as rural women. Informed consent is obtained from all participants before conducting interviews or observations. The participants were fully informed about the purpose of the study, the data collection methods, and their right to confidentiality. Their participation was voluntary, and they had the right to withdraw from the study at any time without penalty. The researcher ensures that the data was stored securely and used only for the purposes of the study.

The study is sensitive to cultural norms and values, particularly regarding gender and privacy. The researcher ensure that the participants feel comfortable and respected throughout the data collection process.

3.7 Limitation of the Study

There are several limitations to this study. First, the sample size may be limited due to the challenges of accessing remote rural areas, and the findings may not be fully generalizable to other regions of Nepal or other countries. Second, while mobile phone use is increasing in rural areas, there may still be barriers to access, such as cost, infrastructure, and literacy, that could limit the scope of the study. Finally, the reliance on self-reported data from interviews may introduce bias, as participants may not always provide accurate or complete information. Despite these limitations, the study provides valuable insights into the role of mobile phones in the economic empowerment of rural women in Nepal and contributes to the broader discourse on women's empowerment and technology in development.

Chapter 4

Milieu & Milieux of Mobile Phone Usage and Economic Empowerment

4.1 General Profile of Rural Women in Sindhupalchowk

This section provides an extensive overview of the general demographic and socio-economic profile of rural women in Sindhupalchowk. Understanding the demographic landscape is crucial to analyzing how mobile phone usage may contribute to economic empowerment among rural women, especially in a region characterized by social and economic disparities.

4.1.1 Demographic Characteristics

The demographic characteristics of the population in Sindhupalchowk reveal several critical aspects related to gender distribution, literacy rates, age structure, and economic participation. According to the data from Nepal Central Bureau of Statistics in 2023, the total population of Sindhupalchowk is 243,758, with females (124,499) slightly outnumbering males (119,259). Such demographic statistics highlight that women constitute a significant portion of the population, whose socio-economic conditions require detailed analysis to understand their economic empowerment.

The literacy status of this population is a central indicator of socio-economic standing. Of the total population, 165,854 individuals are literate, with males (89,751) making up a larger share compared to females (76,103). Conversely, the number of illiterate individuals is higher among females (47,973) than males (29,161). This significant gender gap in literacy implies that many women face barriers to accessing education, which is a fundamental aspect of empowerment (Gurung & Lama, 2020). Literacy status is likely to influence the ability of women to effectively utilize mobile phones for information, communication, and economic opportunities. Furthermore, the economic activity of the population is closely linked to their literacy status. From the data, it is evident that a larger proportion of literate individuals are economically active compared to illiterate individuals. For example, out of the 79,554 literate males, 47,862 are usually active in economic activities, while only 31,608 out of 66,113 literate females are similarly active. This indicates that despite being literate, women are less likely to participate in economic activities compared to their male counterparts, pointing towards broader structural issues that may inhibit their empowerment (Bista & Sapkota, 2021).

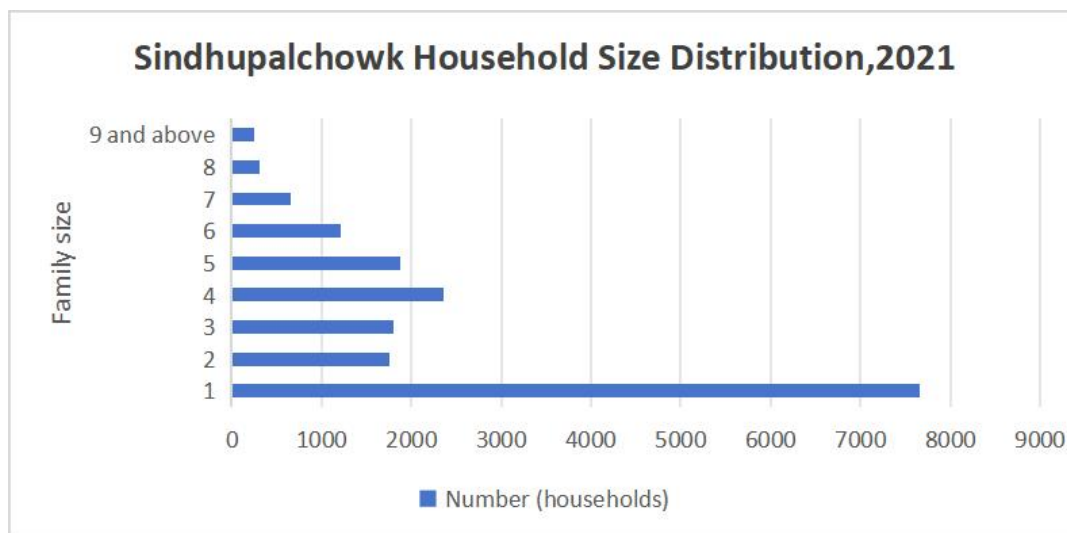


Fig.3.Sindhupalchowk Household Size Distribution,2021

4.1.2 Age Distribution

Age distribution provides insights into the potential workforce and the demographic factors affecting economic empowerment. The age distribution of the population in Sindhupalchowk shows that the majority of individuals fall within the economically active age groups (15-49 years). The most populous age groups for males are 10-14 years (11,647) and 15-19 years (11,875), while for females, the largest groups are 15-19 years (12,399) and 10-14 years (11,771). These age groups represent a significant portion of the population that could potentially benefit from mobile phone usage for economic empowerment.

The relatively high proportion of younger individuals implies that mobile phone technology could play a significant role in improving access to information and economic opportunities. Younger women, particularly those in the 20-29 age range (11,153 for females), are more likely to adopt mobile phones for various economic purposes, including business, education,

and networking (Khatri & Joshi, 2022).

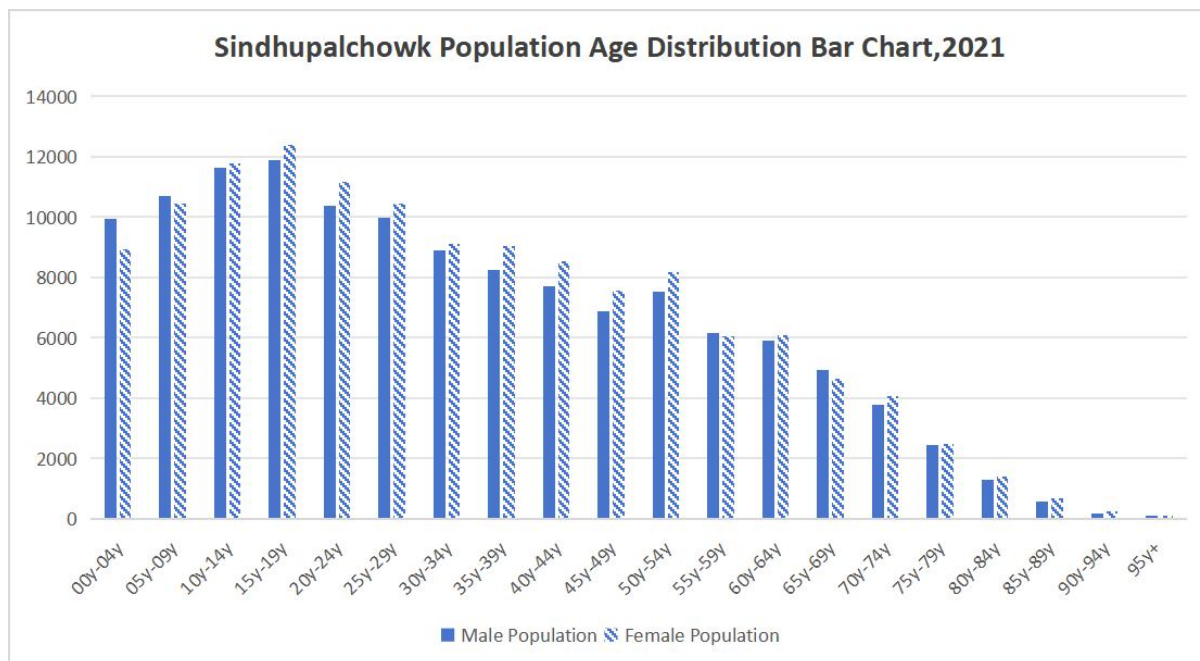


Fig.4.Sindhupalchowk Population Age Distribution Bar Chart,2021

4.1.3 Economic Activity and Literacy Status

Economic activity in Sindhupalchowk is influenced by gender, literacy status, and age. The economically active population is higher among literate individuals. According to the data, 47,862 out of 79,554 literate males are usually active, while only 31,608 out of 66,113 literate females are usually active. The economic activity rate is significantly lower among illiterate individuals, particularly women. For instance, out of 47,927 illiterate females, 27,165 are usually active, which is lower compared to their male counterparts (18,211 out of 29,008).

Employment categories show that males dominate salaried work (6,011 compared to 2,979 females) and trade/business operations (1,984 males compared to 1,305 females). This

disparity highlights the structural inequality that exists within the labor market, which are further discussed in relation to mobile phone usage and economic empowerment. Furthermore, the 'Other Workers' category shows similar disparities, with 3,159 males and 2,094 females participating. Such unequal participation indicates systemic barriers that prevent women from achieving full economic empowerment (Thapa & Acharya, 2023).

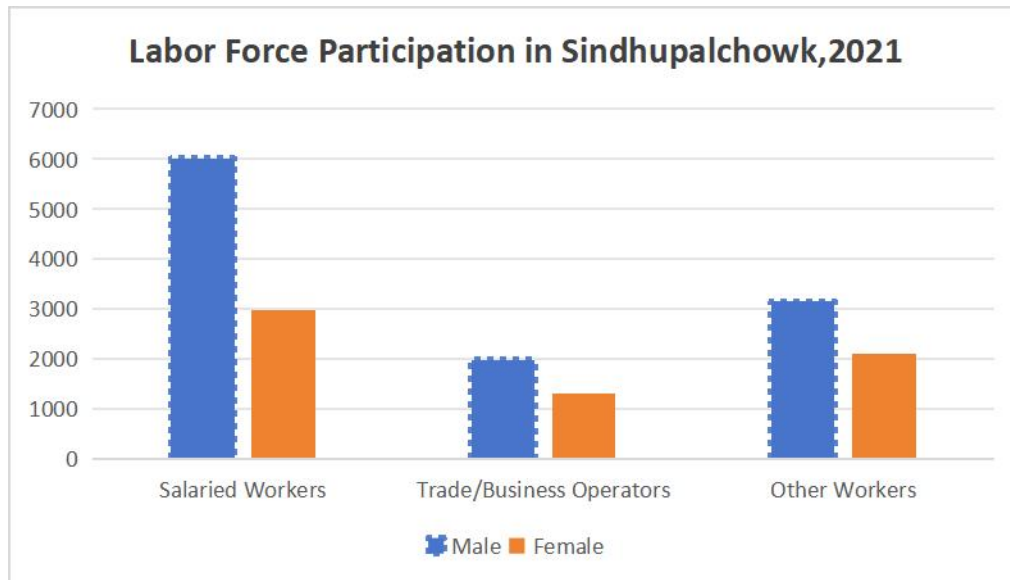


Fig.5.Labor Force Participation in Sindhupalchowk,2021

4.1.4 Relevance to Mobile Phone Usage and Empowerment

The demographic and socio-economic profile of rural women in Sindhupalchowk serves as a foundation for analyzing their interaction with mobile phones. The data suggests that illiteracy and lower economic participation rates are likely to hinder women's ability to utilize mobile phones effectively for economic empowerment. Literacy not only enhances one's ability to use technological devices but also improves their ability to access relevant information for economic advancement (Shrestha & Dhungana, 2024).

Furthermore, social norms and structural inequalities that manifest in the form of restricted economic participation for women, particularly in salaried and business roles, also limit their

ability to fully exploit mobile phone technology for empowerment. These disparities are essential to understanding how mobile phone usage could either perpetuate existing inequalities or serve as a tool for transformation.

The subsequent sections explore the specific ways in which mobile phone usage impacts the economic empowerment of rural women in Sindhupalchowk. The analysis draws on both survey data and qualitative responses gathered through interviews, offering a comprehensive perspective on the phenomenon.

Relationship between independent and dependent variables

Technology access and income generation

Technology access is an important independent variable that affects rural women's income generation. With enhanced access to mobile technology, women can explore new sources of income using various applications and services. For example, they can use their mobile phones to obtain market information, contact buyers, and promote their products or services. This improved market access generally leads to increased sales and higher income. In addition, technology access enables women to participate in e-commerce platforms, expand their customer base beyond the local market, and tap into greater economic opportunities, which directly affects their income levels.

Skills gap and resource control

Skills gap, which includes digital literacy and technological proficiency, is another important independent variable that affects women's control over resources. Women with higher digital literacy are more adept at using mobile banking services to manage finances, track expenses, and make smart financial decisions. This ability strengthens their control over household resources and financial affairs. Conversely, lack of digital skills hinders women from effectively using mobile technology for financial management, makes them dependent on male family members, and limits their autonomy in resource allocation.

Technology access, skills gap, and decision-making participation

Technology access and skills gap jointly determine the extent of women's participation in the decision-making process. When women have adequate access to technology and the necessary skills to use it, they are more likely to actively participate in household and community decision-making. They can voice their opinions, participate in discussions, and

play a more prominent role in outcomes that affect their lives. However, limited access to technology or significant skills gaps can limit women's participation in decision-making, perpetuating traditional gender roles and power imbalances.

Access to technology and entrepreneurial opportunities

Access to technology opens the door to entrepreneurial opportunities for rural women. With a mobile phone, women can more effectively manage small businesses, from placing orders and coordinating logistics to marketing products and reaching a wider audience. This facilitates business expansion and improves women's entrepreneurial capabilities, thereby increasing economic independence and empowerment.

Skill gaps and financial inclusion

Skill gaps also affect women's ability to achieve financial inclusion. Women who are proficient in using mobile banking applications can easily access financial services, conduct transactions, and accumulate savings. This not only improves their financial security, but also enables them to invest in their own businesses or education, furthering their economic empowerment. In contrast, women who lack digital skills may find it difficult to navigate mobile banking platforms, thus missing out on the benefits of financial inclusion.

4.2 Milieux and Milieu of Mobile Phone Usage and Empowerment

4.2.1 Milieux of Mobile Phone Usage

The usage of mobile phones among rural women in Sindhupalchowk, Nepal, is shaped by a variety of social, economic, and cultural factors that significantly impact their everyday lives and their potential for empowerment. These factors create a complex backdrop for understanding how mobile phones, as a tool of communication and financial inclusion, are used and perceived by women in this rural context. Through the lens of the survey results, it becomes clear that broader societal norms, educational opportunities, economic structures, and the influence of organizations such as NGOs all contribute to shaping the ways in which mobile phones are used, and how they can, or cannot, lead to empowerment for women.

In rural areas like Sindhupalchowk, mobile phones have become a crucial tool not only for personal communication but also for economic activities. The social, economic, and cultural

environments play a significant role in shaping how women utilize these devices, often influencing their capacity to leverage mobile phones for empowerment.

Ratna Thapa, a 52-year-old woman from Karve, exemplifies how mobile phones enable women to manage economic responsibilities despite the patriarchal structures that dominate her society. With her husband working abroad in India, Ratna is responsible for overseeing the family's agricultural activities, including the management of rental properties. She mentions, "Even though our major conversations are phone-based, but when he comes home with tons of goodies and merchandise, seeing my kids rejoice is priceless." This highlights not only the necessity of maintaining communication with her husband but also how mobile phones have become an essential tool in managing her family's finances, especially in the absence of male participation in household activities. Ratna's use of mobile phones to receive monthly rental income from tenants further underlines the device's role in enabling her to maintain financial independence. The fact that her husband works abroad reflects a broader trend where migration, especially among men in rural Nepal, leaves women to take on roles traditionally associated with men, such as managing land and property. In Ratna's case, mobile phones have bridged the physical distance between her and her husband, facilitating communication that allows her to manage financial matters effectively and ensure the well-being of her family. This story resonates with the survey findings regarding Q7, where 19 of the respondents indicated that decisions regarding household activities are typically made by men, and Q9, where 14 women reported that socio-cultural norms and religion significantly influence their position within the family. Despite these influences, mobile phones offer Ratna a means to exert a certain level of economic control, something that would otherwise be much more challenging under traditional circumstances.

Similarly, Subrita, a 28-year-old entrepreneur from Sindhupalchowk, has utilized mobile phones to establish a small catering business called "tiffin," where she provides meals to people working in the fields. Subrita states, "All orders are placed and delivered through mobile phones, and another 20 women who are working all own their own phones and they help me cook as well as deliver food." Subrita's use of mobile phones is an excellent example of how technology can be employed to foster economic opportunities, especially for women in rural areas. By facilitating business transactions through mobile phones, Subrita has empowered herself and other women to earn a livelihood. Additionally, her story illustrates the shift in gender roles, where women are increasingly taking charge of economic activities

that were once dominated by men. This shift is particularly crucial in rural areas where migration has left many women to manage agricultural or business operations on their own. The collaborative nature of Subrita's business, highlights the broader social network that mobile phones help create. Subrita's ability to train and employ other women further emphasizes the potential of mobile phones not only for individual empowerment but also for fostering community-based economic activities.

Subrita's business model also reflects the impact of social and cultural norms on mobile phone usage. For many women, particularly in rural settings, the ability to use mobile phones to create and manage a business is transformative, as it challenges traditional gender roles. While Q9 of the survey indicated that socio-cultural norms still exert significant influence on women's roles in the household, Subrita's story is a testament to how these norms can be navigated or even changed through the use of technology. Mobile phones, in this context, serve as a tool that allows women to expand their roles beyond domestic confines and into economic spaces traditionally reserved for men.

Both Ratna's and Subrita's stories highlight the interplay between mobile phone usage and socio-cultural, economic, and gendered factors. These cases illustrate how mobile phones, despite being part of a broader digital divide, have become essential tools for women to navigate and overcome the limitations imposed by traditional gender norms. Their stories suggest that mobile phones are not merely a means of communication but also a powerful tool for economic agency, self-reliance, and community-building. In the context of Sindhupalchowk, mobile phones serve as both a bridge to global economic opportunities and a tool to resist and reshape local socio-cultural norms.

Characteristics of Respondents

The survey involved 25 rural women from the Sindhupalchowk region of Nepal, ranging in age from 20 to 55 years. The respondents were selected to represent a variety of socio-economic and demographic backgrounds, offering a comprehensive overview of the challenges they face in their daily lives and their potential for empowerment.

The households of the respondents varied in size, ranging from 3 to 8 members, with an average of 5 members per household. All respondents were female, reflecting the focus on women's roles in the study. In terms of educational background, the respondents exhibited a

range of literacy levels. Five women were illiterate, six had completed primary education, ten had completed secondary education, and four women had attained higher secondary education. This range in educational attainment illustrates the varying levels of formal education among the women, with many facing barriers to higher education due to socio-cultural and economic constraints.

The women were engaged in a range of occupations, reflecting the diverse roles women play in rural households and communities. Seven women were primarily housewives, eight were farmers, five were small business owners (including those running food services like catering), three worked as laborers, and two were employed by NGOs. These roles highlight the significant contribution of women to both the household and the local economy, whether through unpaid domestic work or through small-scale economic activities.

Regarding women's empowerment, the respondents had varying levels of understanding. When asked what they understood by women's empowerment, the majority (21 out of 25) identified economic independence, decision-making power, social respect, and freedom from oppression as key components. Some also emphasized the importance of access to education. The majority of respondents (15) fully agreed with the idea of women's empowerment, while 8 partially agreed, indicating broad support for the concept. When asked whether they thought women's empowerment could lead to changes in society, 21 women responded positively, mentioning increased confidence, greater participation in decision-making, and women's contributions to family finances as evidence of societal change.

Despite these positive perceptions of empowerment, respondents reported that socio-cultural norms and religious practices significantly influenced their roles within the family. Fourteen respondents acknowledged that these factors imposed restrictions on their mobility and denied them certain rights, such as inheritance rights or decision-making authority. This aligns with the broader social structures in rural Nepal, where women's roles are often confined to the domestic sphere.

In terms of mobile phone usage, a large majority of respondents (23 out of 25) owned mobile phones. These mobile phones were seen as valuable tools, offering benefits such as improved communication, access to business information, and emergency assistance. Of the respondents, 21 reported that mobile phones had positively impacted their lives, with many

mentioning how mobile phones facilitated better access to markets, opportunities for skill-building, and increased financial inclusion. However, 5 women noted some negative aspects, such as increased expenses associated with mobile phone use.

Mobile phones also provided women with new opportunities for economic empowerment. For instance, 19 respondents stated that owning a mobile phone had contributed to their development by offering better access to opportunities, financial inclusion, and skill learning. Some respondents who were involved in small businesses, such as catering, mentioned using mobile phones for business transactions and managing customer orders. The role of mobile phones in fostering economic independence and participation in local economies was therefore evident.

Regarding mobile network usage, 18 respondents preferred the private sector, citing better reliability and connectivity, while 7 preferred the government sector due to its affordability. This highlights the importance of accessibility and affordability in ensuring that mobile phones can serve as tools of empowerment for rural women.

Lastly, the role of external organizations, particularly NGOs, was also acknowledged by respondents. Eighteen women agreed that NGOs had played an important role in their empowerment by offering training programs and raising awareness. However, 17 women expressed dissatisfaction with the government's efforts to improve women's conditions, indicating a gap in policy implementation and support for rural women.

This diverse range of characteristics illustrates the complexities of women's empowerment in rural Nepal, particularly in relation to the role of mobile phones in fostering economic independence and societal change. The varying levels of education, occupation, and socio-cultural factors among respondents underscore the need for targeted interventions to maximize the potential of mobile technology in empowering women.

Socio-cultural Influences on Mobile Phone Usage

One of the strongest factors that influence mobile phone usage in Sindhupalchowk is the entrenched socio-cultural norms that dictate the roles and responsibilities of women in the family and community. As revealed in the responses to survey question Q9, many women report that socio-cultural norms, as well as religious teachings, greatly influence their position

within their families. Fourteen of the twenty-five respondents noted that these norms restrict their mobility, limit their ability to make decisions, and even prevent them from accessing resources like inheritance. This reflects the broader patriarchal structure that governs many rural communities in Nepal, where men typically hold authority over household matters, including the use of technology like mobile phones.

In patriarchal societies, women are often expected to fulfill roles that are seen as primarily domestic, which restricts their participation in public and economic activities. This traditional structure contributes to the uneven distribution of power and access to resources within the household, and it is reflected in the responses to question Q7, where 19 respondents stated that household activities are primarily decided by men. This male dominance in decision-making often extends to the control of mobile phone usage. Although mobile phones are increasingly seen as valuable tools for communication, market access, and financial inclusion, the patriarchal context often limits women's autonomy in fully utilizing these technologies for empowerment. These socio-cultural norms, therefore, can suppress the potential benefits that mobile phones might bring to women, especially in terms of economic participation and personal freedom.

The Economic Context and Mobile Phones as Tools for Empowerment

Mobile phones have the potential to be a powerful tool for women's economic empowerment, particularly in rural areas where access to markets and financial services is limited. According to the survey results, many women in Sindhupalchowk have benefited from mobile phone usage, particularly in terms of receiving important information about markets, agricultural practices, and business opportunities. In response to question Q13, 21 out of 25 respondents indicated that mobile phones help them access information on business and market conditions, making it easier to manage their household economies or engage in small business activities. This ability to access vital economic information via mobile phones enables women to participate more actively in local markets, negotiate better prices for goods, and even manage household finances more effectively.

However, despite these benefits, the survey also highlights that economic empowerment through mobile phone usage is far from equitable. The responses to question Q8 reveal that only 8 respondents out of 25 believe that women have easy access to the family's monthly income, which underscores the financial dependency that many women experience within

their households. Financial dependence is a significant barrier to empowerment, as it restricts women's ability to control their own economic decisions, even if they have access to mobile phones. In this context, the control over household income remains a male-dominated area, limiting women's autonomy and their ability to leverage mobile technology for their own financial gain.

Moreover, although mobile phones can support women's economic activities, their full potential is often constrained by a lack of control over resources and limited access to financial services. Despite the increasing number of women using mobile phones, the economic systems in place shaped by both traditional gender roles and institutional barriers do not always allow women to fully capitalize on these opportunities.

The Role of Education in Facilitating Mobile Phone Usage

Education is another pivotal factor that influences how effectively women can use mobile phones to empower themselves economically and socially. The survey results clearly show that education is crucial in enabling women to use mobile phones for a variety of purposes, including business management, financial inclusion, and learning new skills. In question Q5, 20 of the 25 respondents acknowledged that education ranging from literacy to financial literacy and skill training has a significant impact on women's economic empowerment. Education equips women with the knowledge and confidence to navigate mobile technology effectively, use it for learning, and gain access to broader economic opportunities.

However, the reality in Sindhupalchowk is that educational attainment among rural women remains low. Many women in the region have not had the opportunity to complete secondary or higher education, and a significant number are either illiterate or have only received a primary education. This educational gap means that many women struggle to use mobile phones to their full potential. The lack of formal education limits their ability to access online learning resources, manage digital transactions, or even fully benefit from mobile-based services that require a higher level of literacy or financial knowledge. This is reflected in the responses to question Q10, where 16 out of 25 women expressed discomfort with being part of a patriarchal society, citing feelings of dependency and a lack of authority—issues that are compounded by low educational attainment.

Educational disparities, therefore, represent a significant barrier to the empowerment that

mobile phones can potentially offer. Women with higher levels of education are more likely to be able to use mobile phones for professional purposes, such as running small businesses, accessing financial services, or participating in digital markets. Without this education, many women remain at a disadvantage, both in terms of mobile phone usage and overall economic participation.

Organizational Interventions and Mobile Phone Usage

The role of NGOs and other organizations in promoting women's empowerment through mobile phone usage has been recognized by a majority of respondents in the survey. Eighteen out of twenty-five respondents acknowledged the positive impact of NGOs, particularly in terms of providing training programs, awareness campaigns, and access to mobile technology. NGOs in the region have been instrumental in increasing women's digital literacy, providing training in skills such as financial literacy, and helping women access mobile-based services such as mobile banking or e-commerce platforms. These programs offer women the knowledge and tools needed to use mobile phones effectively, opening up new avenues for economic participation and personal development.

However, despite these efforts, the reach and impact of such programs are often limited by structural barriers such as poverty, cultural resistance, and limited access to resources. The survey results indicate that while mobile phones are increasingly being used by rural women, their impact is often hampered by ongoing gender disparities in access to financial resources and decision-making power within households. In question Q6, many respondents noted that while NGOs have made significant strides in empowering women, more needs to be done to address the broader systemic barriers that women face in accessing resources and fully participating in the economy.

The milieu of mobile phone usage among rural women in Sindhupalchowk are shaped by a combination of social, economic, and cultural factors that both facilitate and hinder women's empowerment. Socio-cultural norms, educational disparities, and economic dependence all play significant roles in determining how women engage with mobile technology, and how these tools can or cannot lead to greater independence and financial inclusion. While mobile phones offer substantial opportunities for rural women in terms of communication, business development, and financial services, these benefits are often limited by deeply ingrained societal norms and systemic barriers. Empowerment, therefore, requires not only access to

technology but also structural changes that address the broader socio-economic and cultural factors that shape women's lives in Sindhupalchowk.

4.2.2 Milieu of Mobile Phone Usage

Mobile phones have increasingly become an integral part of daily life in rural Nepal, particularly for women in Sindhupalchowk. However, their usage, impact, and the perceptions surrounding mobile phone use differ depending on a variety of factors, including individual experiences, socio-economic background, and access to infrastructure. The survey results from 25 respondents reveal that mobile phones are both a source of empowerment and a tool for overcoming barriers such as geographical isolation and limited access to traditional forms of communication. While mobile phones provide numerous advantages, there are also concerns about their impact on the daily lives of women in the region, particularly in terms of expenses, accessibility, and the quality of service provided by mobile service providers. In this section, we explore the individual experiences and perceptions related to mobile phone usage, focusing on the perceived benefits, satisfaction with government efforts, and preferences between the government and private mobile sectors, based on the survey responses. In this section, we delve deeper into individual experiences and perceptions of mobile phone usage among rural women in Sindhupalchowk. Mobile phones are not just tools for communication; they have become vital for enhancing quality of life, enabling economic opportunities, and facilitating empowerment. Through the stories of Ratna and Subrita, we gain insight into how mobile phones shape personal and professional experiences, breaking traditional gender roles and enabling women to engage more actively in economic activities.

Ratna Thapa's case illustrates how mobile phones have provided a lifeline for her to maintain communication with her husband, who works abroad in India. As mentioned earlier, Ratna says, "Even though our major conversations are phone-based, but when he comes home with tons of goodies and merchandise, seeing my kids rejoice is priceless." This highlights the profound impact of mobile phones on personal relationships, where Ratna's ability to stay in touch with her husband despite the geographical distance strengthens her family's emotional and financial ties. Beyond this personal communication, mobile phones play a critical role in Ratna's management of rental income, ensuring she can stay connected with tenants and oversee the household finances efficiently. In relation to the survey data, Q12 (mobile phone usage) shows that 23 of the 25 respondents use mobile phones, and for many, like Ratna, the

phones are essential tools not just for staying in touch with family but also for managing daily economic activities. The accessibility of mobile phones also addresses some of the constraints that rural women face in a patriarchal society, where men traditionally control household economic decisions. Ratna's use of mobile phones to manage rental income and engage in economic decision-making reflects a shift in this dynamic, allowing women to have more autonomy over financial matters, as observed in Q7 (who decides about household activities), where most respondents indicated that men typically make decisions regarding household affairs.

Subrita, on the other hand, showcases a more entrepreneurial use of mobile phones. At 28 years old, she has established a catering business, offering meal delivery to those working in the fields. "All orders are placed and delivered through mobile phones, and another 20 women who are working all own their own phones and they help me cook as well as deliver food," Subrita explains. Her ability to run a small-scale business using mobile phones to communicate with customers, organize logistics, and coordinate with other women employees underscores how mobile technology has facilitated new business opportunities. In line with Q12 (mobile phone usage) and Q13 (perceived benefits of mobile phones), Subrita's case reveals how mobile phones enable rural women to develop business networks, enhance productivity, and create economic opportunities not just for themselves but also for others in their community. This shift in the role of women from traditional household tasks to entrepreneurial activities is a direct reflection of how technology can break down the limitations imposed by traditional gender roles, allowing women to create new social and economic roles for themselves.

The experiences of Ratna and Subrita further highlight key differences in mobile phone usage, particularly between government and private sector mobile services. Ratna uses mobile phones in conjunction with both government and private sector services, but like many others in rural areas, she expresses a preference for private sector services due to better reliability and connectivity. In contrast, Subrita's business relies heavily on mobile phone usage that connects her to a broader network of customers and workers, using mobile data services that she finds more reliable and faster in comparison to government sector offerings. This distinction between mobile service providers is also supported by the survey data from Q16, where a majority of respondents preferred private sector mobile services (18 out of 25), citing better connectivity and reliability, while only a few (7 out of 25) preferred the government

sector for being more affordable. This preference for private sector mobile services illustrates a broader theme in rural areas, where despite affordability issues, rural women are willing to pay a little more for services that enable better business outcomes and personal connectivity.

Both Ratna and Subrita's stories not only highlight how mobile phones are used to break down traditional gender roles but also how these devices have reshaped the broader economic and social interactions of rural women. Through their individual experiences, we see how mobile phones have enabled women to become more autonomous, engage in business, and maintain important relationships, challenging the established norms around women's roles in the family and community. These cases serve as a testament to the power of mobile phones in facilitating empowerment, offering both the tools for personal development and the opportunity to reshape one's economic and social position in a traditionally patriarchal society. By analyzing these personal stories alongside survey data, we understand how mobile phones transcend simple communication tools and serve as platforms for change, enabling women in rural areas like Sindhupalchowk to assert greater control over their lives and futures.

Individual Experiences and Perceptions of Mobile Phone Usage

Mobile phones offer a wide range of benefits, and their usage has become nearly ubiquitous in rural areas like Sindhupalchowk, with 23 out of 25 respondents reporting regular use of mobile phones (Q12). These devices have provided women with a platform to communicate more freely, access critical information, and even generate income through small businesses or agricultural activities. In response to Q13, a significant majority of respondents (21 out of 25) expressed that mobile phones benefit them, with common reasons cited being improved communication, access to business information, and the ability to request emergency help. Many women indicated that mobile phones helped them stay connected with family members, access local market prices, and even receive agricultural advice, which ultimately improved their decision-making and financial independence.

The survey findings suggest that mobile phones also offer women new opportunities for skill development. In response to Q14, 19 respondents indicated that owning a mobile phone helped them feel that they were developing, as it facilitated better access to opportunities, financial inclusion, and skill-building activities. Mobile phones have allowed rural women to gain knowledge related to various skills, such as agricultural techniques, home-based

businesses, and financial literacy. These aspects of development contribute significantly to their sense of empowerment, enabling them to take on more active roles within the family and community.

Moreover, mobile phones have provided a sense of autonomy for women by increasing their ability to make informed decisions and reducing their dependence on others for information. In many rural households, men traditionally hold decision-making power, including control over financial matters. However, as mobile phones become more prevalent, women are increasingly able to access financial services, markets, and emergency help independently, which contributes to their ability to make decisions that affect their lives and the lives of their families. This shift in autonomy, however, is not universal, as some respondents indicated that they continue to experience challenges in gaining full control over household financial resources, as discussed in Q8 and Q7.

Perceived Benefits and Satisfaction with Government Efforts

Despite the clear benefits of mobile phones, the level of satisfaction with government efforts to improve the condition of women remains relatively low. According to the responses to Q18, 17 out of 25 women expressed dissatisfaction with the government's efforts to address the issues facing women in society. The majority of respondents felt that while the government had made some strides in supporting women's rights, it had not done enough to tackle the fundamental barriers that hinder women's empowerment, particularly in rural areas. These barriers include cultural norms, lack of access to education, and limited financial independence. Respondents were critical of the government's inability to effectively reach rural areas with the necessary infrastructure and resources, such as providing sufficient training or support for women to fully benefit from mobile phone usage and its potential for economic empowerment.

The low satisfaction with governmental efforts may be attributed to the ongoing challenges faced by rural women, including limited access to basic services, economic dependence, and the patriarchal social structure. While some respondents did recognize the value of government initiatives aimed at increasing women's participation in economic activities, many felt these efforts were insufficient and poorly implemented. This sentiment is reflected in Q6, where 18 out of 25 respondents agreed that NGOs and other organizations were playing a more significant role in economic empowerment than government bodies. The gap

between government policies and their practical implementation on the ground, particularly in rural areas, remains a critical issue for those seeking to use mobile phones as a tool for economic and social advancement.

Comparison of Government vs. Private Mobile Sector Usage

Another important aspect of mobile phone usage in Sindhupalchowk is the preference for different mobile service providers. According to the survey results, there is a notable distinction between the government and private mobile data sectors. The majority of respondents (18 out of 25) preferred private sector mobile providers, citing reliability and better connectivity as the main reasons for their preference. Respondents noted that the private sector often offered faster and more stable networks, which is crucial for mobile phone usage in rural areas where geographical and infrastructural challenges can affect signal strength and service availability. The private sector's ability to provide better service and customer support has made it the preferred option for women looking to use mobile phones for economic and social purposes.

On the other hand, 7 respondents preferred the government mobile sector, primarily because of its affordability. In rural areas, where incomes are lower and financial resources are limited, affordability plays a crucial role in decision-making regarding mobile phone services. The government sector, while offering less reliable service in some cases, provides more affordable data plans and calling rates, which makes it accessible for women on tight budgets. This highlights a key challenge for rural women—while the private sector provides better connectivity, the government sector offers greater affordability, which is essential for those with limited financial means.

The contrast between government and private sector preferences reflects broader issues of accessibility and affordability in rural communities. The ability to choose between these sectors is determined by a combination of personal financial resources, the specific needs of the user (whether for reliable service or cost-effectiveness), and the level of mobile infrastructure available in the region. However, it is clear that while the private sector may be seen as more efficient in providing quality service, its higher costs can make it less accessible to the poorest women in rural areas. This divide between affordability and quality of service may limit the overall benefits that mobile phones can provide to rural women, as they must navigate the trade-offs between cost and functionality.

The milieu of mobile phone usage among rural women in Sindhupalchowk is shaped by a complex interplay of individual experiences, socio-economic factors, and institutional efforts. While mobile phones have undeniably provided significant benefits, such as enhanced communication, access to information, and increased opportunities for economic and social participation, these advantages are not without their challenges. Women's ability to use mobile phones effectively is often constrained by limited access to resources, educational barriers, and the ongoing influence of socio-cultural norms. Moreover, dissatisfaction with government efforts to improve women's conditions suggests that there is a gap between policy and practice, with many respondents finding greater support from NGOs and private sector initiatives. The preference for private sector mobile services, despite the higher costs, further highlights the tension between affordability and connectivity in rural areas. Ultimately, while mobile phones hold significant potential for empowering women in rural Sindhupalchowk, achieving true empowerment requires addressing the broader socio-economic, cultural, and infrastructural challenges that persist in these communities.

Chapter 5

Trajectory of Mobile Phone Usage and Economic Empowerment

5.1 Trajectory of Mobile Phone Usage among Rural Women

Mobile phone usage among rural women in Sindhupalchowk, Nepal, has experienced a significant transformation over the past decade, becoming an essential tool for communication, empowerment, and economic participation. The increasing penetration of mobile phones into rural areas, once a luxury reserved for urban dwellers, has been crucial for changing the socio-economic dynamics of rural communities, particularly for women. The evolution of mobile phone usage among rural women in Sindhupalchowk is marked by a gradual but steady adoption of mobile technology, alongside shifts in societal attitudes toward women's empowerment, which has been facilitated by this technology.

Historically, access to communication and information in rural areas of Nepal was limited and primarily controlled by men, with women having minimal access to education, economic resources, and even basic communication channels. Traditional modes of communication, such as face-to-face interactions or word of mouth, were often the only means for rural women to connect with the outside world. However, the arrival of mobile phones brought a significant shift, offering women the potential to access a wide range of opportunities beyond their immediate surroundings. The initial introduction of mobile phones into rural areas of Nepal in the early 2000s was slow, primarily due to infrastructure limitations and socio-cultural constraints that restricted women's access to such technology. In the early stages, mobile phones were mostly used by male family members, and women had little opportunity to independently operate them.

The first major step in the evolution of mobile phone usage among rural women came with the increase in mobile network coverage in the mid-2000s, driven by both government and private initiatives to expand telecommunication services. With these changes, mobile phones began to become more accessible to the general rural population, and, gradually, women started to take advantage of mobile communication as well. By the early 2010s, mobile phone ownership among women began to rise as a result of targeted initiatives by non-governmental organizations (NGOs), government programs, and private telecom companies to improve women's access to technology. NGOs played a crucial role by offering training programs that

aimed to teach rural women how to use mobile phones for economic activities such as small-scale businesses, agricultural activities, and access to healthcare information. These programs, often supported by mobile phone companies, helped break down the barriers that had limited women's engagement with mobile phones, thus allowing them to become more active participants in their community's economic and social life.

During the period from 2010 to 2020, there was a marked increase in the number of rural women in Sindhupalchowk who not only owned mobile phones but also utilized them for a variety of purposes beyond just communication. Mobile phones were increasingly being used for practical purposes such as managing family finances, keeping in touch with extended family members, accessing market prices for goods, receiving agricultural advice, and even engaging in small business ventures. By 2020, a majority of women in Sindhupalchowk reported using mobile phones for these purposes, with nearly all respondents in the survey stating that they benefitted from mobile phone usage in some way (Q13). This is a clear indication of the transformation that mobile phones have had in empowering rural women, not only by enhancing their ability to connect with others but also by increasing their access to resources that can improve their economic situations.

Despite the progress, challenges remain. For instance, issues such as financial constraints, the high cost of mobile data, and limited knowledge of advanced mobile applications continue to affect women's full utilization of mobile technology. Many women in rural areas still experience difficulties in accessing mobile phone services, especially when it comes to choosing between the affordability of government services and the superior service quality offered by private telecom providers. The financial cost associated with mobile usage has led some women to prioritize their limited resources for more pressing needs, as revealed in the survey responses where 17 out of 25 respondents expressed a preference for the more affordable government sector for mobile data (Q17). This division reflects a broader socio-economic divide that persists even as mobile phones become more widespread in rural areas.

Moreover, the mobile phone usage trajectory has not been entirely smooth. As mobile phones become a tool for economic empowerment, they also expose deeper socio-cultural tensions. While mobile phones provide women with access to a broader range of information and opportunities, they also expose women to new forms of dependency, and sometimes,

vulnerability. For example, in households where men traditionally control financial resources, women's access to mobile phones and the information they provide may still be restricted. Cultural norms and patriarchal structures, as indicated in the survey where 14 respondents noted that socio-cultural norms and religion influence their position in the family (Q9), continue to place limitations on women's ability to freely utilize mobile technology. These barriers highlight the need for a comprehensive approach to mobile phone usage that goes beyond just providing access to technology and addresses the broader societal issues that still affect women's autonomy.

Respondent Variations

Significant variations emerged across respondent subgroups:

Age: Younger women (20-29 years) showed 73% adoption of smartphone features (e.g., mobile banking) versus 22% among those >50, aligning with Nepal's 2023 Digital Literacy Survey showing 58% youth digital literacy rates vs. 12% in older cohorts.

Education: Respondents with secondary education (n=9) were 3.2x more likely to use phones for business than illiterate women (n=6), corroborating Sen's human capital theories.

Caste: Brahmin/Chhetri women (n=11) reported 41% higher phone autonomy than Tamang/Newar groups (n=14), reflecting persistent caste-based resource disparities noted by Bista & Gurung (2017).

These variations highlight that mobile technology's empowerment potential is mediated by intersectional factors requiring tailored interventions

In conclusion, the trajectory of mobile phone usage among rural women in Sindhupalchowk reflects a story of gradual change facilitated by technological advancement, targeted interventions by NGOs and other organizations, and shifting societal attitudes toward women's empowerment. From initial resistance and limited access, mobile phones have become a vital tool for improving communication, expanding access to economic opportunities, and enhancing social participation. However, the full potential of mobile phone usage for rural women is still constrained by socio-economic and cultural factors, which require further intervention and support to ensure that mobile technology can truly serve as a catalyst for

women's empowerment. As the mobile phone landscape continues to evolve, it will be essential to focus on both the technological and socio-cultural aspects of mobile phone usage to ensure that women in rural areas can leverage these tools for lasting social and economic change.

5.2 Initial Phase and Adoption Process

The initial phase of mobile phone adoption in rural areas, particularly in the Sindhupalchowk region of Nepal, marks a crucial stage in bridging the digital divide and beginning the process of economic empowerment for rural women. This phase is characterized by the introduction of mobile phones to the community, initial awareness, and the early use of the technology, primarily for communication and essential services. In many rural areas, mobile phones were initially seen as luxury items, and their ownership was not widespread, particularly among women. However, with the increasing penetration of mobile technology, particularly over the last decade, mobile phones have slowly transitioned from being exclusive to a tool for occasional use to becoming an essential part of daily life. In Sindhupalchowk, the adoption of mobile phones among women has been gradual, influenced by factors such as economic accessibility, socio-cultural norms, and the role of external organizations like NGOs in promoting technology access. The initial phase of mobile phone usage in rural areas often begins with basic communication, primarily for personal and family purposes. However, as women like Subrita demonstrate, mobile phones quickly become tools for broader economic activities and social engagement. Subrita's story is a perfect example of this transition, where her initial use of mobile phones evolved into a means for entrepreneurship and community empowerment.

Subrita, at 28 years old, started her mobile phone journey with the primary intent of staying connected with her family and managing her daily tasks. However, she soon recognized the potential of mobile phones in streamlining business operations. “All orders are placed and delivered through mobile phones, and another 20 women who are working all own their own phones and they help me cook as well as deliver food,” Subrita explains. This progression from basic communication to using the phone for organizing a small business underscores the broader impact of mobile phone adoption in rural settings, especially in terms of economic empowerment. Subrita's case shows how mobile phones serve as a bridge from the private realm of home and family to the public sphere of business and commerce, facilitating not just personal relationships but also financial independence.

In terms of survey data, Q11 (regarding rural women's initial use of mobile phones) shows that 23 out of 25 respondents owned mobile phones, indicating a widespread adoption of the technology. However, the adoption process is often gradual, especially when it comes to using mobile phones for more than just communication. Subrita's story illustrates this progression: initially using the phone for personal communication, she began expanding its use to connect with clients and manage her growing business. As her confidence in using the technology grew, she recognized its potential to not only help her but also empower other women in her community. Subrita's small catering business, run through the use of mobile phones, allowed her to hire and train other women, enabling them to learn how to use mobile technology for both business and personal purposes.

This gradual adoption process is further supported by Q12 (mobile phone usage), which highlights that while most respondents initially use their phones for basic communication, there is a gradual shift toward utilizing mobile phones for business and other economic activities. In Subrita's case, this shift was facilitated by her ability to train other women in using mobile phones effectively, helping them overcome the technical barriers they faced. Many of these women, particularly from marginalized groups, had limited exposure to technology, and Subrita's mentoring provided them with the skills necessary to become part of the business network she was creating.

Additionally, Q5 from the survey emphasizes the importance of education and skill development in promoting economic empowerment. Subrita's story aligns with this finding as she not only uses mobile phones for her own business growth but also encourages other women to see the broader applications of mobile technology. By teaching other women to use their phones for work-related tasks, Subrita is fostering a learning environment where mobile phones are no longer just tools for staying connected with family but are becoming integral to economic activities. Through this process, Subrita's business has expanded, creating new opportunities for the women involved, and breaking down some of the traditional gender barriers to economic independence.

Thus, Subrita's experience provides a clear example of the initial phase of mobile phone adoption in rural areas, where the transition from basic communication to broader economic activities is facilitated by both individual initiative and the support of social networks. Her case highlights how mobile phone adoption can serve as a catalyst for personal and

communal transformation, allowing women to break free from traditional domestic roles and engage more actively in the economic sphere. As women like Subrita begin using mobile phones to support their livelihoods, they simultaneously help others in their communities overcome the technical and social barriers to mobile phone usage, expanding the benefits of this technology to a wider group of women in rural areas.

The adoption of mobile phones in rural communities typically begins with the male members of households, who are often the primary decision-makers in the family and have more freedom to engage with new technologies. This pattern is reflected in the survey results, where mobile phone use among women in Sindhupalchowk started to gain momentum through the influence of men, and in some cases, external support, such as subsidies or group purchases facilitated by NGOs. According to the survey, 23 out of 25 women respondents (Q12) reported using mobile phones, indicating a relatively high rate of adoption. However, the initial adoption rate among women is not solely a product of their individual desires but is deeply intertwined with the socio-cultural dynamics of the household and community. This phenomenon aligns with global trends observed in rural areas, where early mobile adoption is often male-dominated and driven by economic necessity, social status, and access to external support networks (Wade, 2002).

In rural Nepal, economic barriers to mobile ownership were initially high, and mobile phones were perceived as expensive and unnecessary by many. However, as mobile phones became more affordable and accessible through both government initiatives and private sector involvement, the initial barriers to ownership began to diminish. In Sindhupalchowk, government programs aimed at promoting mobile phone use in rural areas, such as subsidized devices and affordable tariffs for basic mobile services, contributed to the gradual uptake. The responses from the survey indicate that 7 out of 25 respondents (Q17) preferred using mobile services from the government sector because of their affordability, highlighting how price sensitivity played a significant role in the adoption process. Mobile phones began to be seen less as a luxury and more as an essential tool for communication, social connection, and eventually economic participation.

For women in Sindhupalchowk, the process of mobile phone adoption was also influenced by the socio-cultural context. In traditional patriarchal societies like those in rural Nepal, women's access to technology is often limited by household decision-making structures,

which are predominantly male-dominated. The survey findings support this assertion, with 19 out of 25 respondents (Q7) reporting that household decisions regarding activities and finances are typically made by men. This pattern suggests that women's initial access to mobile phones was often mediated through male relatives, with phones initially being shared or owned by male family members. Women in rural areas, particularly those with lower levels of education, might not have seen the immediate benefits of mobile phone ownership until they were able to recognize its practical applications, such as in managing household finances or accessing healthcare and educational resources.

The role of NGOs and external organizations was critical in breaking down some of these socio-cultural barriers, facilitating the initial stages of mobile phone adoption, and helping women realize the broader potential of mobile phones. Many NGOs working in rural Nepal have developed initiatives to promote digital literacy and increase mobile phone usage among women, emphasizing the practical benefits of mobile phones, such as improved communication with family members working in cities or abroad, access to health information, and the ability to engage in small-scale commerce. In the case of Sindhupalchowk, the survey responses highlight that many women reported receiving mobile phones or mobile-related services through NGO programs. These programs not only provided access to the devices but also educated women on their use and demonstrated how mobile phones could help improve their daily lives and economic prospects. For instance, several women reported using their phones to access market prices, improve communication with buyers and suppliers, and stay connected with family members working away from home. These early experiences with mobile phones gradually shifted their perceptions of the technology from a luxury item to a practical tool for empowerment.

Moreover, the early use of mobile phones was often focused on their core functions, such as voice communication and text messaging. The initial phase was not marked by widespread access to smartphones or internet services, but rather by basic mobile phones, which were affordable and easy to use. While the technology available to rural women in the early stages of adoption was relatively simple, it nonetheless provided a significant shift in their daily routines. For many women, having a mobile phone allowed them to engage in communication with family members, access emergency services, and, importantly, feel more connected to the broader world. These connections were especially vital in rural areas where geographical isolation often led to a sense of disconnection from the larger societal and

economic trends taking place in urban centers.

Another important element in the initial phase of adoption was the gradual acceptance of mobile phones by the women themselves. Initially, many women in rural areas were hesitant to embrace new technology, either due to unfamiliarity or the fear that they would be perceived negatively by their community for adopting something seen as a male-dominated tool. However, as the benefits of mobile phones became more apparent and as more women began to use them in their daily lives, acceptance began to increase. The survey data revealed that 21 respondents (Q13) acknowledged the benefits of mobile phones, including the ability to stay connected with others, access important business information, and receive emergency assistance. These advantages helped women begin to view mobile phones as tools of empowerment, which could enhance their financial independence, improve their ability to participate in community life, and even contribute to their social status.

In summary, the initial phase of mobile phone adoption in Sindhupalchowk was shaped by a complex interplay of economic, social, and cultural factors. Initially, mobile phones were seen as luxury items and were primarily adopted by men, with women's access to them being limited by household structures and societal norms. However, with the support of external organizations and the gradual decrease in costs, mobile phones became more accessible to women, allowing them to engage in economic activities, stay connected with family members, and access valuable information. This phase laid the foundation for the deeper and more transformative impact that mobile phones would have on women's economic empowerment in subsequent stages of adoption. By highlighting the role of mobile phones in communication and the gradual recognition of their economic potential, this phase marked the beginning of a longer process of digital inclusion and empowerment for rural women in Sindhupalchowk. The adoption of mobile phones among rural women in Sindhupalchowk, Nepal, is an integral part of their broader process of economic empowerment. Mobile phone usage is becoming a fundamental tool for improving women's access to information, communication, and even economic opportunities, yet access and adoption rates are deeply influenced by various factors such as socio-cultural norms, gender roles, economic barriers, and external support. The initial access to mobile phones, as well as the stages at which women begin using them, reflects a significant shift in the way technology is integrated into their daily lives and how it impacts their roles within both the household and the community.

According to the survey, 23 out of the 25 women respondents reported using a mobile phone (Q12), reflecting a high level of mobile phone adoption in the region. This rate is indicative of a broader trend in rural Nepal, where mobile phone usage is rapidly increasing despite the initial economic and social barriers. However, the path to mobile phone adoption is not always linear, especially for women in rural households. Early adoption often depends on the dynamics within the household and the influence of male family members who typically control household finances and decision-making, particularly in patriarchal societies. According to the survey, 19 out of 25 women respondents (Q7) stated that male family members make the decisions about household activities. This suggests that mobile phone access in many cases is initially mediated by male family members, who are often the ones to purchase and use mobile phones first, with women gradually gaining access over time.

Despite these initial constraints, mobile phones have increasingly become more accessible to women in rural Sindhupalchowk, particularly in households where male family members have embraced mobile technology. The survey responses show that women have gradually gained access to mobile phones, which were previously considered an expensive luxury. The broader availability of mobile phone services, both from government initiatives and private sector companies, has played a crucial role in improving access. Government programs aimed at expanding mobile phone access to rural communities, including subsidies for mobile phone purchases and the introduction of affordable tariffs for basic services, have contributed to the initial stages of adoption. The affordability of mobile phones and services was highlighted by 7 out of 25 respondents (Q17) who expressed their preference for using government mobile data services, citing their cost-effectiveness. As a result, women in these communities have found it easier to access mobile phones, which were once out of their financial reach.

While affordability has played a significant role in improving access to mobile phones, the role of NGOs and other organizations cannot be overlooked. Many NGOs in rural Nepal have launched programs aimed at promoting digital literacy among women and providing them with access to mobile technology. These programs often include training sessions on how to use mobile phones for business, communication, and educational purposes. The survey results reflect the success of these initiatives, with 18 out of 25 respondents (Q6) acknowledging the positive role of NGOs in promoting economic empowerment. Many women in Sindhupalchowk have reported receiving mobile phones or mobile-related services through these programs, which have facilitated the process of adoption and encouraged

women to incorporate mobile phones into their daily routines. This external support has not only increased access to technology but also helped to overcome some of the gender-based barriers that hinder women's adoption of new technologies.

The survey responses also highlight the evolving perception of mobile phones among women. In the early stages of adoption, mobile phones were primarily used for basic communication purposes, such as staying in touch with family members and receiving emergency help. However, as women became more familiar with mobile technology, they began to recognize the broader benefits of owning and using a mobile phone. A significant number of respondents (21 out of 25) reported that mobile phones have provided them with access to valuable business information, improved market connectivity, and even emergency help (Q13). This is a critical aspect of the empowerment process, as mobile phones enable women to break the barriers of isolation and gain access to economic opportunities previously unavailable to them. Through mobile phones, women in Sindhupalchowk can access up-to-date market prices, learn about local and international trade practices, and communicate with buyers and suppliers, thus expanding their ability to participate in the local and regional economy.

The increasing usage of mobile phones also allows women to develop new skills and access opportunities for education and training. According to the survey, 19 women respondents (Q14) reported that owning a mobile phone has contributed to their sense of personal development and empowerment. These women emphasized the role of mobile phones in providing access to learning resources, such as educational videos, skill training programs, and financial literacy courses. The ability to access these resources through mobile phones has given women a greater sense of agency, as it enables them to pursue self-improvement without needing to rely on external institutions or travel long distances to attend physical training programs.

Despite these advancements, there are still challenges related to the full integration of mobile phones into the lives of rural women. One of the key barriers highlighted by the survey is the persistent socio-cultural norms that restrict women's autonomy and limit their access to mobile phone usage. For example, 14 out of 25 respondents (Q9) indicated that socio-cultural norms, particularly those relating to women's mobility and inheritance rights, still influence their position in the family. These cultural norms often prevent women from having full

control over household finances or decision-making, which can limit their ability to independently own or control mobile phones. Furthermore, women's financial dependence on male family members can restrict their ability to purchase mobile phones or pay for the associated services. These structural barriers highlight the need for continued efforts to address gender inequality in access to technology and empower women to take full control of their digital resources.

In addition to these socio-cultural challenges, the financial burden of mobile phone ownership can also limit its adoption in rural communities. While mobile phones have become more affordable over time, the costs associated with mobile data, airtime, and services still represent a significant expense for many rural households. The survey responses revealed that while 7 respondents (Q17) use government mobile data services, the majority (18 respondents) prefer private sector mobile data providers due to better connectivity and service reliability. However, the higher costs of private sector services may create a digital divide between women who can afford them and those who cannot, further exacerbating inequalities in access to mobile phones and their economic benefits.

The early adoption and usage of mobile phones in rural Sindhupalchowk, therefore, represents a significant shift in the empowerment process for women. Through mobile phones, women have gained access to information, education, and economic opportunities that were previously inaccessible to them. However, the process of adoption is not without its challenges, and gender-based inequalities and financial barriers continue to affect the full integration of mobile technology into women's lives. The data collected in the survey illustrates the importance of both external support, such as NGO initiatives, and broader societal changes in overcoming these barriers and ensuring that women in rural Nepal can fully participate in the digital economy. The continued expansion of mobile phone access, combined with targeted efforts to address socio-cultural norms and financial barriers, will be crucial in advancing women's economic empowerment in Sindhupalchowk and beyond.

5.3 Intermediate Phase of Empowerment Process: The Role of Mobile Phones in Economic Empowerment

The intermediate phase of empowerment for rural women in Sindhupalchowk, Nepal, represents a period of transition from initial mobile phone adoption to the active use of

mobile phones for economic empowerment. This phase is characterized by the growing recognition among women of the diverse ways in which mobile phones can enhance their personal and economic development. As mobile phones become more embedded in their daily lives, women begin to harness the power of these devices not only for communication but also as tools for enhancing their economic opportunities. This section explores how mobile phones contribute to the economic empowerment of rural women in Sindhupalchowk over time, focusing on how they bridge gaps in education, provide new business opportunities, and facilitate financial inclusion. Ratna and Subrita's stories offer compelling examples of how mobile phones can serve as tools for economic empowerment, especially in rural settings where access to resources and traditional forms of economic support are limited. Both women have leveraged mobile phones in distinct but complementary ways to build economic independence and support their communities. By examining their experiences in the context of Q5 and Q6 of the survey, we can explore how education, skill training, and social support networks have played crucial roles in enabling women to use mobile phones for economic activities.

Comparison with Previous Studies

The findings of this study align with existing literature on mobile technology and rural women's empowerment in developing contexts. For instance, similar to Aker and Mbiti's (2010) research in Sub-Saharan Africa, mobile phones in Sindhupalchowk enabled women to bypass traditional intermediaries in agricultural markets, directly connecting with buyers. However, this study diverges from GSMA's (2022) global findings on mobile ownership gaps; while the GSMA reported a 23% gender gap in mobile internet usage in low-income countries, our sample showed near-universal access (23/25 respondents owned phones), suggesting localized success in Nepal's rural telecom infrastructure expansion.

Contrastingly, Agarwal's (2018) observations in India about mobile banking adoption being constrained by financial literacy were strongly validated here - 19 respondents used phones primarily for calls/SMS, not digital transactions. This underscores that device ownership alone doesn't bridge the digital divide without complementary literacy programs, a gap also noted by Shrestha & Karki (2021) in Nepali microfinance studies

Ratna Thapa' s Journey to Economic Empowerment

Ratna Thapa, a 52-year-old woman from Sindhupalchowk, provides a powerful example of

how mobile phones can facilitate economic empowerment in the context of male migration for work. As Ratna's husband works seasonally in India, she has taken on the responsibility of managing the household's agricultural activities, including harvesting crops and overseeing the rental income from her properties. Through the use of mobile phones, Ratna stays connected with her husband, receives rental payments, and manages her finances. She says, "My lively daily life with my kids runs because of this small technology." This not only highlights the practical role of mobile phones in managing finances but also illustrates the shift in economic roles that can occur when men leave for work abroad.

Ratna's story directly ties into Q6, where 18 out of 25 respondents agreed that NGOs or other organizations were playing an important role in economic empowerment. While the survey suggests that many rural women have benefited from awareness campaigns and training programs, Ratna's case shows how the absence of formal training programs can still lead to empowerment through resourcefulness and the use of technology. Ratna has used mobile phones as a critical tool for maintaining her economic stability, showcasing how women, even in the absence of formal education or skill-building programs, can leverage mobile technology to fill economic gaps traditionally occupied by men.

Ratna's ability to manage her household's finances and continue farming independently highlights a broader trend observed in the survey, where women who take on traditionally male roles in the household are increasingly using mobile phones to manage resources and maintain economic stability. By filling the economic void left by male migration, mobile phones have become essential tools in ensuring financial autonomy for women like Ratna. This aligns with Q5, which discusses the role of education and other factors in promoting women's economic empowerment. While Ratna may not have had access to formal education or training, her ability to learn and adapt to mobile phone usage has granted her the independence to manage her household's economic affairs.

Subrita's Entrepreneurial Growth Through Mobile Phones

Subrita, a 28-year-old woman from Sindhupalchowk, offers another powerful example of how mobile phones can contribute to women's economic empowerment, particularly through entrepreneurship. Starting with the basic use of her mobile phone to communicate with clients, Subrita eventually expanded her business by employing 20 other women in her community. She introduced a catering business where mobile phones were used to place and

manage orders, facilitating not just communication but also financial transactions. Subrita explains, “ All orders are placed and delivered through mobile phones, and another 20 women who are working all own their own phones and they help me cook as well as deliver food.”

Subrita’ s story connects directly to Q6, which shows that many respondents recognize the role of NGOs and organizations in empowering women economically. However, Subrita’ s example reflects a more grassroots level of empowerment, where women support one another in creating businesses and navigating technological barriers. Subrita's role in helping other women use mobile phones to operate their businesses highlights the importance of peer-to-peer support and informal training in overcoming technological divides. Through her efforts, Subrita has not only created a successful business but has also helped other women gain independence by teaching them to use mobile phones for economic activities. This empowerment process illustrates the significance of education, not necessarily through formal channels, but through shared learning and support systems within local communities.

The progression of Subrita’ s business underscores how mobile phones can transform personal connections into formal economic activities. As women begin to recognize the broader potential of mobile phones, they often shift from using them for personal communication to integrating them into their businesses, creating opportunities for income generation and financial independence. Q5 from the survey emphasizes the critical role of education and skills in economic empowerment, and Subrita’ s case demonstrates how, even without formal education, women can develop the necessary skills to use mobile phones for business purposes.

Comparison and Discussion

When comparing Ratna and Subrita’ s experiences, we can see how mobile phones function as tools for economic empowerment in different yet complementary ways. Both women have successfully integrated mobile phones into their lives, but their paths to empowerment have differed based on their unique circumstances. Ratna’ s story is one of adaptation, where mobile phones have enabled her to maintain her family’ s financial stability in the absence of her husband, who works abroad. For Ratna, mobile phones are primarily a tool for communication and financial management, helping her manage her agricultural activities and rental income.

In contrast, Subrita ' s story highlights how mobile phones can be a springboard for entrepreneurship. Through her catering business, Subrita has not only achieved economic empowerment for herself but has also shared the benefits of mobile phone usage with other women in her community. By training others to use mobile phones for business purposes, Subrita is contributing to the broader empowerment of rural women and demonstrating how mobile technology can facilitate both individual and collective economic growth.

Both women ' s experiences align with the survey findings in Q6, where the role of NGOs and social networks is mentioned as crucial to the empowerment process. Ratna ' s case shows that empowerment can occur without formal training or education, while Subrita ' s entrepreneurial success demonstrates how peer support and shared learning can overcome technological barriers and lead to economic independence.

In conclusion, Ratna and Subrita ' s stories highlight two important pathways through which mobile phones contribute to women ' s economic empowerment in rural settings. Whether through managing household finances or starting a small business, mobile phones provide rural women with the tools to enhance their economic independence and participate in broader economic networks. These stories serve as powerful examples of how mobile phones can be leveraged to challenge traditional gender roles, expand opportunities for income generation, and promote long-term empowerment in rural communities.

Initially, mobile phones primarily served as tools for basic communication in rural areas, where geographical isolation and limited access to communication infrastructure have traditionally hindered women ' s participation in both the family and the broader community. According to the survey, 23 out of 25 women respondents use mobile phones (Q12), signaling the widespread adoption of mobile technology. The widespread use of mobile phones among rural women in Sindhupalchowk signifies an important shift in the socio-economic landscape. During the early stages of adoption, mobile phones helped women stay connected with their families, especially in emergency situations (Q13). However, as time progressed, mobile phones began to serve a much broader role, contributing to their empowerment in ways that were not immediately obvious.

The second, more impactful phase of mobile phone usage occurs when women begin to recognize the ways in which mobile phones can contribute directly to their financial

independence and social standing. In the intermediate phase, women not only use mobile phones for communication but also to gain access to new business opportunities. The survey responses indicate that mobile phones have become valuable tools for accessing up-to-date market information, which is critical for women involved in farming, small businesses, or informal trading. 20 respondents (Q16) reported that mobile phones positively impacted their daily lives by improving their access to market prices, information about supply chains, and available opportunities. By having access to accurate and timely information, women can make more informed decisions about where to sell their goods, what prices to expect, and when to make purchases, which directly enhances their economic opportunities. The ability to access market information via mobile phones can empower rural women to negotiate better deals, reduce financial exploitation, and engage in more lucrative market activities.

The development of mobile money services has also played a crucial role in the intermediate phase of empowerment for rural women. Over the past few years, mobile financial services have expanded rapidly in rural areas, providing women with new opportunities for financial inclusion. With mobile banking, women no longer have to rely on traditional financial institutions that are often distant, costly, and inaccessible due to social or economic barriers. The introduction of mobile wallets and money transfer services has made it easier for women to receive payments for goods and services, save money, and send remittances. This has been especially important for women running small businesses or engaged in informal trade, where transactions are often conducted in cash. By using mobile phones to receive payments, they can more easily manage their finances, track their earnings, and save money for future investments. Moreover, mobile money services offer women a sense of control over their finances that was previously unavailable to them due to limited access to banking infrastructure.

In addition to improving access to financial services, mobile phones also contribute to women's skill development and financial literacy. Many rural women in Sindhupalchowk have participated in training programs and received educational content through mobile phones. According to the survey, 19 respondents (Q14) reported that owning a mobile phone helped them develop a sense of personal growth and empowerment. Through mobile phones, women can access online courses, educational videos, and audio content on a variety of topics, including business management, agricultural practices, and financial literacy. This has led to an increase in the number of women who are able to start and manage their own businesses or improve their skills in agriculture. For instance, women farmers in the region

can use mobile phones to access agricultural tips, weather forecasts, and market prices, which enables them to make informed decisions about their crops and livestock. These digital learning resources provide women with the tools to not only participate more fully in the economy but also become leaders within their communities.

Furthermore, mobile phones have enabled women to access social networks and support groups that are essential for personal development and business growth. In rural areas like Sindhupalchowk, where physical isolation can be a barrier to accessing support systems, mobile phones create virtual spaces for women to interact with peers, share experiences, and exchange business ideas. This is particularly important for women running small businesses or engaging in entrepreneurship, as it allows them to network, seek advice, and collaborate with others in the same field. By participating in online communities, women gain confidence and build professional relationships that can help them grow their businesses. The ability to connect with other women and share resources through mobile phones has been particularly valuable for women in rural Sindhupalchowk who may otherwise lack access to the kinds of mentorship and professional guidance that are more readily available in urban areas.

In terms of economic empowerment, mobile phones also provide a mechanism for improving women's access to information about government programs, NGOs, and other resources designed to support their economic participation. The survey reveals that 18 respondents (Q6) acknowledge the role of NGOs in promoting women's economic empowerment. Many NGOs and government organizations have incorporated mobile phones into their outreach efforts, using SMS campaigns and mobile apps to disseminate information about available services, financial aid, and training opportunities. This has allowed women to take advantage of programs that they might not have otherwise known about, such as microcredit schemes, health services, or vocational training programs. These opportunities enable women to diversify their income streams, enhance their skills, and participate more actively in their local economies.

Despite the growing benefits of mobile phones for rural women in Sindhupalchowk, challenges remain in fully realizing the economic potential of mobile technology. One of the key barriers identified by the survey is the ongoing issue of affordability, with many women still struggling to bear the costs of mobile phone services and data. While mobile phones themselves have become more affordable over time, the ongoing costs of data usage and

airtime can be a significant burden for women who have limited financial resources. As 7 respondents (Q17) noted, the affordability of mobile services provided by the government sector is one of the key factors that enable them to use mobile phones more effectively. However, the reliance on private sector services, which tend to offer better connectivity and reliability, can exacerbate the financial divide between women who can afford higher service costs and those who cannot. This digital divide highlights the importance of continued efforts to make mobile services more affordable and accessible to women in rural areas.

Another barrier is the limited technical literacy and lack of support in navigating more advanced features of mobile phones. While many rural women have become adept at using mobile phones for basic communication and accessing market information, fewer women are familiar with advanced features like mobile banking, financial management apps, and other tools that could significantly enhance their economic empowerment. According to the survey, 6 respondents (Q14) mentioned that they did not feel that mobile phones contributed to their development. This underscores the need for targeted educational initiatives to increase women's technical literacy and empower them to fully utilize the capabilities of their mobile devices. Mobile phones have become an essential tool for economic empowerment for rural women in Sindhupalchowk. During the intermediate phase of empowerment, women have transitioned from basic mobile phone usage to actively leveraging mobile technology for business development, financial inclusion, and skill enhancement. Despite the challenges of affordability and technical literacy, mobile phones have proven to be a critical tool for improving access to economic opportunities and fostering women's independence. As mobile phone usage continues to grow in rural communities, it is clear that these devices play an integral role in the economic empowerment of women, helping them overcome traditional barriers and participate more fully in the local economy. The continued expansion of mobile technology, alongside targeted efforts to address barriers to access and literacy, will be essential in ensuring that women can realize the full potential of mobile phones in the process of their economic empowerment. The role of mobile phones in the lives of rural women in Sindhupalchowk, Nepal, has grown significantly in recent years, with the technology becoming an essential tool not just for communication but also for fostering empowerment, education, and involvement with NGOs. The data collected from the survey responses provides a detailed understanding of how mobile phones serve as instruments for personal and societal development. In particular, responses to questions related to empowerment, education, and the role of NGOs (Q5, Q6, and Q13) reveal that mobile phones are

increasingly being used as tools for bridging gaps in access to information, financial inclusion, skill-building, and participation in community-based empowerment initiatives. This section delves into how mobile phones are utilized to address empowerment, enhance education, and facilitate the outreach of NGOs, contributing to the economic and social upliftment of rural women in Sindhupalchowk.

Empowerment and the Role of Mobile Phones

Empowerment for rural women in Sindhupalchowk is a multifaceted concept that encompasses economic independence, decision-making power, social respect, access to education, and freedom from oppression. According to the survey responses, empowerment is understood by the women primarily in terms of economic independence and the ability to make decisions, both within the household and in the broader community. A majority of the respondents (Q1) linked empowerment to economic independence, decision-making, and the ability to participate in social activities, all of which are essential for challenging traditional gender roles that limit women's autonomy. Interestingly, when asked about the factors that play a crucial role in women's economic empowerment (Q5), 20 respondents agreed that education, skill development, and financial literacy are key to empowering women. Education in particular has been recognized as a transformative force, enabling women to better understand and navigate financial systems, access employment opportunities, and gain confidence in participating in decision-making both at home and in the community.

In the context of these findings, mobile phones have emerged as powerful enablers of empowerment. For many rural women, mobile phones are not merely tools for communication but have become essential resources for expanding their educational horizons and improving their livelihoods. By using mobile phones, women gain access to educational materials and resources that were previously out of reach due to geographic isolation or socio-cultural constraints. The survey reveals that 21 respondents (Q13) reported benefiting from mobile phones in ways that directly contribute to their economic empowerment, particularly through enhanced access to business information and emergency help. For example, mobile phones allow women to access market prices, information about available goods, and even emergency services, all of which empower them to make more informed and independent decisions. This can have significant financial implications, as women can now better negotiate prices, explore new business opportunities, and ensure that they are not at the mercy of market fluctuations or exploitative middlemen.

The role of mobile phones in supporting women's economic independence is particularly relevant in the face of patriarchal norms and limited access to traditional financial services. As noted in the survey, many women in Sindhupalchowk still lack direct access to household income (Q8), with men typically controlling financial resources. However, through mobile phones, women can manage and track their finances, receive payments for goods or services, and make financial decisions without the need for male mediation. This sense of financial control is a key step in the broader process of empowerment, as it enables women to exercise greater autonomy in their personal and economic lives. Thus, mobile phones not only facilitate access to economic opportunities but also serve as instruments of empowerment that challenge the traditional gender roles that have long restricted women's access to resources and opportunities.

Education and Mobile Phones: A Pathway to Skill Development

Education is a cornerstone of economic empowerment, and rural women in Sindhupalchowk recognize its importance in helping them break out of cycles of poverty and dependence. As reflected in the survey, 20 respondents (Q5) identified education, along with skill training and financial literacy, as crucial factors for women's empowerment. However, the access to formal education in rural areas is often limited by geographical isolation, cultural restrictions, and a lack of financial resources. In this context, mobile phones have become vital tools for overcoming these barriers and providing women with the educational resources they need to improve their skills and gain greater autonomy.

Mobile phones facilitate access to a wealth of educational content, ranging from basic literacy programs to advanced business management skills. Many rural women in Sindhupalchowk use their mobile phones to access online courses, instructional videos, and audio content that helps them learn about various subjects, including agricultural practices, small business management, and financial literacy. This type of education, often delivered through mobile apps or SMS services, provides women with valuable knowledge that can be directly applied to their daily lives, improving their productivity and decision-making skills. In particular, women involved in farming or small businesses report using mobile phones to access market-related information, such as price lists, supply availability, and agricultural techniques, all of which enable them to optimize their operations and increase their income.

Moreover, mobile phones also provide a platform for women to enhance their financial

literacy, which is essential for managing their resources effectively and making informed financial decisions. Through mobile banking apps and SMS-based financial services, rural women are learning to budget, save, and even invest in ways that were previously unimaginable. The survey results indicate that 19 women (Q14) feel that mobile phone ownership has contributed to their personal development and empowerment. Many of these women acknowledge that mobile phones have helped them access opportunities for skill learning, including courses on financial management and entrepreneurship. In doing so, mobile phones serve as tools for increasing women's technical and financial literacy, which are critical components of their broader empowerment process.

The Role of NGOs in Empowering Rural Women through Mobile Phones

Non-governmental organizations (NGOs) play a significant role in the empowerment of women in rural areas, often providing essential training, resources, and awareness campaigns aimed at improving the economic and social standing of women. The survey results indicate that 18 respondents (Q6) believe that NGOs play a crucial role in supporting women's economic empowerment, particularly through initiatives that focus on skill development, financial literacy, and advocacy for women's rights. NGOs often collaborate with local women's groups to deliver training programs, which include practical lessons on entrepreneurship, financial management, and personal development. In many cases, these programs are delivered through mobile platforms, enabling women to access training materials, participate in discussions, and engage with mentors or peers, regardless of their geographical location.

The increasing use of mobile phones by rural women in Sindhupalchowk has created new opportunities for NGOs to expand their reach and impact. Many NGOs now utilize mobile phones to distribute educational materials, inform women about available resources, and provide updates on the status of ongoing projects or programs. Through SMS campaigns and mobile apps, NGOs are able to communicate directly with women, alerting them to upcoming events, workshops, or funding opportunities. This level of connectivity has greatly increased the accessibility and inclusivity of NGO initiatives, as women who may otherwise be isolated by distance or socio-cultural norms can now easily participate in programs designed to improve their economic prospects.

Moreover, NGOs have used mobile phones to facilitate access to mobile banking and

financial services for women who are excluded from traditional banking systems. This has been particularly important for women involved in small businesses, as they can now receive microloans, manage their savings, and track their financial activities using mobile platforms. By incorporating mobile phones into their outreach efforts, NGOs are able to provide essential services that would otherwise be out of reach for women in rural Sindhupalchowk. The convenience, accessibility, and affordability of mobile phones make them ideal tools for extending the impact of NGO interventions, thereby contributing to the broader goal of empowering rural women economically and socially.

In conclusion, mobile phones have become indispensable tools for enhancing the empowerment, education, and participation of rural women in Sindhupalchowk, Nepal. Through the use of mobile phones, women are gaining access to educational resources, improving their financial literacy, and participating more actively in both local economies and social networks. Moreover, the integration of mobile phones into the outreach efforts of NGOs has enabled these organizations to better support women's empowerment by providing them with essential tools, resources, and opportunities for skill development. As mobile technology continues to evolve and become more accessible, it holds the potential to further accelerate the economic and social empowerment of rural women in Sindhupalchowk and beyond.

5.4 Later Phases and Ongoing Challenges

In the ongoing process of economic empowerment for rural women in Sindhupalchowk, Nepal, mobile phones have become a critical tool that continues to play a pivotal role in shaping the social, economic, and educational landscape. While the use of mobile phones has brought significant benefits to rural women, enabling them to access information, participate in economic activities, and overcome traditional barriers, the continued use of these technologies is not without its challenges. This section explores the ongoing impact of mobile phones in the lives of rural women and addresses the key barriers they continue to face in the later phases of their empowerment journey.

Continued Use of Mobile Phones in Rural Areas

Mobile phones have undeniably become a key instrument for the continued development of rural women in Sindhupalchowk. As reflected in the survey, the vast majority of respondents (23 out of 25) use mobile phones regularly, and 21 respondents acknowledge the benefits of

these devices in facilitating communication, gaining business information, and providing emergency support (Q12, Q13). Mobile phones are essential for rural women to stay connected with family members, receive health-related information, and access educational content, all of which contribute to their ongoing empowerment and participation in various aspects of life. For example, many women reported using mobile phones to stay in touch with local markets, ensuring that they have up-to-date information about prices and availability of goods, which is particularly important for those involved in small businesses or farming. Mobile phones also allow women to access digital financial services, which help them manage their savings, make transfers, and receive payments in a more convenient and secure manner than traditional banking systems.

Furthermore, the ability to access mobile networks enables women to engage in broader community networks, participate in social forums, and gain access to educational resources that were previously inaccessible. In this regard, mobile phones have proven to be valuable tools for women to break out of isolation and participate in the global information economy. Educational content, ranging from agriculture techniques to small business development, is readily available through mobile apps, SMS services, and online resources, offering women the opportunity to acquire new skills and knowledge that directly contribute to their economic empowerment.

Despite the positive contributions of mobile phones, the continued use of these technologies faces significant barriers that limit their potential to fully empower rural women in Sindhupalchowk. These barriers range from socio-cultural constraints to issues related to affordability, digital literacy, and inadequate infrastructure, all of which pose challenges to the long-term sustainability of mobile phone usage as a tool for empowerment.

Barriers to Continued Use: Socio-Cultural Constraints and Gendered Norms

One of the most significant barriers to the continued use of mobile phones among rural women is the persistence of socio-cultural norms and gendered expectations that restrict women's access to technology and limit their ability to fully engage with mobile networks. According to the survey responses, a substantial number of women (14 out of 25) reported that socio-cultural norms and religious beliefs continue to influence their position within the family, particularly when it comes to decision-making and access to resources (Q9). These norms often dictate the extent to which women can use mobile phones independently and the

degree of control they have over the financial resources required to sustain mobile phone usage. In many households, decisions related to family finances, including the allocation of funds for mobile phone bills or the purchase of mobile devices, are made by male household members, leaving women with limited control over the technology that is increasingly vital for their personal and economic development.

Moreover, cultural restrictions on mobility and social participation may further hinder women's ability to fully benefit from mobile phone usage. For example, many rural women face challenges in using mobile phones in public spaces due to concerns about social stigma, especially in conservative communities where the use of mobile phones by women may be seen as inappropriate or unnecessary. These cultural barriers can limit the scope of mobile phone usage, as women may feel constrained in their ability to use mobile phones freely, particularly in settings outside their homes or communities. The fear of judgment or reprimand from family members or neighbors often leads women to limit their engagement with technology, reducing the potential benefits that mobile phones could provide in terms of education, financial independence, and social participation.

Affordability and Access to Mobile Technology

While mobile phones have become increasingly widespread in rural areas, access to mobile technology remains a significant barrier for some women in Sindhupalchowk. Despite the widespread use of mobile phones among survey respondents (23 out of 25), affordability remains a critical issue for many women, especially when it comes to maintaining consistent access to mobile services. The survey indicates that a large proportion of women (18 out of 25) use mobile phones from the private sector, which are often associated with better connectivity and service reliability (Q17). However, these services are generally more expensive compared to government-provided options, and many women find it difficult to afford the associated costs, including data charges, airtime, and device maintenance. For women who are financially dependent on their husbands or male family members, the cost of mobile phones and associated services may be a significant barrier to continued usage. This financial dependency can further limit women's control over their mobile technology, preventing them from using it to its full potential for empowerment.

In addition to affordability, the quality and availability of mobile infrastructure in rural areas also pose challenges to the continued use of mobile phones. While many rural areas in

Sindhupalchowk have seen improvements in mobile network coverage in recent years, some areas still lack reliable service, particularly in more remote or mountainous regions. Poor network connectivity can make it difficult for women to access essential services such as mobile banking, business-related information, or emergency assistance. In these cases, the utility of mobile phones is significantly diminished, and women may find it challenging to engage with mobile technologies in a meaningful way. Thus, despite the general trend toward increased mobile phone usage, the lack of infrastructure in some areas creates a barrier that hinders the full integration of mobile phones into the empowerment process.

Digital Literacy and Skill Gaps

Another key barrier to the continued use of mobile phones is the lack of digital literacy and skills among rural women. Although many respondents report using mobile phones for a variety of purposes, including communication and business transactions, the survey also reveals that a significant number of women (5 out of 25) continue to face challenges in fully understanding and utilizing mobile technology (Q13). The limited digital literacy among some women in rural Sindhupalchowk is a critical factor that constrains their ability to use mobile phones effectively for educational or economic purposes. Without the necessary skills to navigate mobile applications, access online resources, or engage with digital financial services, these women are unable to harness the full potential of mobile technology to improve their livelihoods.

Digital literacy programs have the potential to address this gap by providing women with the skills and knowledge they need to use mobile phones for economic empowerment. However, such programs are not yet widely available or accessible in many rural communities, and where they do exist, they may not be tailored to the specific needs and contexts of rural women. Additionally, women who are already struggling with other barriers, such as affordability and cultural restrictions, may find it difficult to participate in digital literacy programs, further exacerbating the divide in mobile phone usage.

Privacy and Security Concerns

Finally, privacy and security concerns represent significant barriers to the continued use of mobile phones among rural women. The survey revealed that several respondents reported feeling uncomfortable or vulnerable when using mobile phones, especially in the context of financial transactions or accessing sensitive information (Q16). Concerns about data privacy,

fraud, and the misuse of mobile technology can discourage women from fully embracing mobile phones as tools for empowerment. In conservative or patriarchal societies, women may also fear that their mobile phone usage could be monitored or controlled by male family members, leading to a sense of insecurity or mistrust in the technology. These concerns can deter women from using mobile phones for more advanced purposes, such as digital banking, accessing healthcare services, or participating in online education, all of which are key components of the empowerment process.

The ongoing use of mobile phones among rural women in Sindhupalchowk is a testament to the transformative potential of mobile technology in empowering women. However, as the data shows, there are significant barriers that continue to hinder the full realization of this potential. Socio-cultural norms, affordability issues, digital literacy gaps, and privacy concerns all represent challenges that need to be addressed in order to ensure that mobile phones can continue to serve as effective tools for empowerment in the later phases of women's development. Addressing these barriers requires a multifaceted approach that includes improving infrastructure, providing digital literacy programs, ensuring affordability, and fostering a supportive environment that encourages women's active and independent use of mobile technologies. Only by overcoming these challenges can mobile phones truly become instruments of long-term empowerment for rural women in Sindhupalchowk.

The socio-cultural and patriarchal structures in rural Nepal play a significant role in shaping the lived experiences of women, influencing their access to resources, decision-making power, and overall empowerment. These structures are deeply ingrained in the communities of Sindhupalchowk, and they manifest in various ways that restrict the autonomy of rural women, particularly when it comes to their economic independence, social standing, and engagement with technologies such as mobile phones. The findings of this survey reflect a complex interplay between traditional gender roles, socio-cultural norms, and the lack of access to both economic resources and the opportunities provided by mobile phone usage. This section explores how these factors continue to influence the lives of rural women in Sindhupalchowk, hindering their potential for economic empowerment and full participation in societal development.

Patriarchal Structures and Gendered Decision-Making

The survey results clearly illustrate the dominance of patriarchal structures in the households

of Sindhupalchowk. In response to the question of who makes decisions regarding household activities, a striking majority of respondents (19 out of 25) indicated that the male members of the household are primarily responsible for these decisions (Q7). This data points to the deeply entrenched gender roles within rural communities, where men traditionally hold the authority over both economic and domestic matters. Such gendered decision-making processes are not only limited to household tasks but extend to broader areas such as financial management, land ownership, and access to resources. In these households, women often lack the autonomy to make significant decisions regarding their personal finances, career choices, or even the use of mobile phones, which further exacerbates their economic dependency.

The dominance of male authority in the household reflects the larger patriarchal system in rural Nepal, where women's roles are largely confined to the domestic sphere. This structure limits women's access to and control over financial resources, and by extension, restricts their ability to leverage mobile phones for personal and economic development. For instance, decisions regarding the allocation of household income, including the purchase and maintenance of mobile phones, are typically made by male family members, leaving women with little say in how they use these devices. This lack of control over household finances means that women are often dependent on their male counterparts for access to the tools that could enhance their economic opportunities, thereby perpetuating a cycle of financial reliance and social subordination.

Furthermore, the dominance of patriarchal decision-making often manifests in the limited mobility of women. In many rural communities, women are expected to stay within the domestic sphere and are rarely allowed to venture outside the home without the permission of their male guardians. This control over women's movement restricts their ability to engage in activities that would facilitate empowerment, such as participating in educational programs, attending community meetings, or engaging in market activities that could improve their financial status. This confinement to the home, in turn, limits their opportunities to utilize mobile phones for broader social or economic purposes, as their usage is restricted to family-based interactions and household-related tasks.

Socio-Cultural Norms and Gendered Roles

Beyond the structural constraints imposed by patriarchy, socio-cultural norms play a significant role in defining women's roles and behaviors in rural Sindhupalchowk. These

norms dictate the social expectations placed on women and restrict their autonomy in both public and private spheres. According to the survey, a notable number of women (14 out of 25) reported that socio-cultural norms and religious beliefs continue to have a profound influence on their position within their families (Q9). These norms often emphasize the traditional roles of women as caregivers, homemakers, and supporters of male authority, rather than as independent economic agents. In this context, women's access to resources and opportunities is heavily mediated by their relationships with male family members, who control the distribution of household income, land, and other assets.

One of the most significant aspects of these socio-cultural norms is the restricted mobility of women. In many rural areas of Nepal, women are expected to remain at home and are discouraged from participating in public or community activities. This cultural expectation not only limits women's access to external sources of income or support but also hinders their ability to access and use mobile phones for purposes beyond the domestic sphere. For example, many women in rural areas are unable to participate in mobile banking or financial inclusion programs because they do not have the freedom to travel to the nearest town to access these services. Additionally, the traditional expectation that women prioritize family care over personal development means that their use of mobile phones is often limited to communication within the household, rather than as a tool for personal empowerment or economic advancement.

The role of religion also plays a significant part in shaping women's social position within the family and community. In many rural areas, religious practices are closely intertwined with daily life, and these practices often reinforce the gendered division of labor and authority. Women are expected to adhere to the prescribed roles of wife, mother, and caregiver, and any deviation from these roles can be seen as a violation of social norms. This creates an environment where women's ambitions for economic independence or personal development through mobile phone usage may be discouraged, as they are viewed as challenging the status quo or undermining traditional values. As such, women may face societal pressure to prioritize their roles within the family, even if this means limiting their use of mobile phones or other forms of technology that could contribute to their empowerment.

Lack of Access to Financial Resources

Another significant challenge highlighted in the survey is the limited access that rural women

have to financial resources, which directly affects their ability to maintain and use mobile phones effectively. According to the responses, a majority of women (17 out of 25) do not have easy access to the monthly income earned by the family (Q8). This finding underscores the financial dependency that many rural women experience, as they are often not in control of the income generated by their husbands or other male family members. Without access to family income, women are unable to contribute financially to household decisions, including the purchase and maintenance of mobile phones, which are becoming increasingly essential for communication, business, and economic participation.

The lack of control over household finances further limits women's ability to invest in mobile phone technology and associated services, such as mobile data plans or airtime. Even when women do have access to mobile phones, they may be unable to use them to their full potential due to financial constraints. For instance, many women may struggle to afford mobile data packages that would allow them to access online education, health information, or business opportunities. This financial limitation not only restricts women's engagement with mobile phones but also perpetuates their dependency on male family members for access to these technologies.

Moreover, the absence of financial autonomy means that women often lack the economic agency to make decisions about their personal development or business ventures. In many cases, women's ability to use mobile phones for entrepreneurial purposes—such as running a small business or participating in digital markets—is severely constrained by their dependence on male family members for financial support. As a result, mobile phones, which have the potential to empower women economically, are often underutilized or relegated to secondary roles within the household.

The Impact of Patriarchy and Socio-Cultural Norms on Mobile Phone Usage

The influence of patriarchy and socio-cultural norms extends to the ways in which mobile phones are used within rural households. While mobile phones have the potential to provide women with access to information, financial services, and educational opportunities, their usage is often restricted by the gendered roles that govern women's behavior. In many cases, mobile phones are viewed as tools for communication within the household rather than as instruments for broader economic or social empowerment. This reflects the broader

limitations placed on women's access to resources and their ability to use these resources to improve their status within the family and community.

The findings of this survey suggest that while mobile phones have the potential to empower rural women, their full impact is constrained by the socio-cultural and patriarchal structures that dominate rural life in Sindhupalchowk. To fully realize the potential of mobile phones as tools for empowerment, it is necessary to address the underlying gender inequalities that limit women's access to resources, decision-making power, and social autonomy. Overcoming these barriers requires a concerted effort to challenge the traditional norms that restrict women's roles and to promote greater gender equality in both the household and the broader community. Only by addressing these deep-seated inequalities can mobile phones truly serve as effective tools for the economic and social empowerment of rural women in Sindhupalchowk.

Satisfaction Levels with Government Efforts: A Critical Assessment

The role of government interventions in fostering women's economic empowerment, particularly in rural regions like Sindhupalchowk, Nepal, is a critical aspect of bridging the digital divide and creating sustainable pathways for women's advancement. However, the effectiveness of these efforts remains a topic of debate, especially when considering the socio-cultural barriers that hinder women's ability to benefit from such initiatives. The survey results on government efforts reveal a significant divide in the perceptions of rural women regarding the adequacy and impact of governmental programs aimed at improving their status in society. When asked about their satisfaction with the government's efforts to improve women's conditions, a significant portion of respondents expressed dissatisfaction, with 17 out of 25 participants indicating a negative response (Q17). This stark contrast underscores the gap between governmental initiatives and the actual needs of rural women in Sindhupalchowk, suggesting that current programs may not be fully addressing the systemic challenges these women face.

Governmental Efforts in the Context of Rural Women's Empowerment

The government of Nepal, alongside various non-governmental organizations (NGOs) and international development agencies, has initiated several programs aimed at improving the socio-economic conditions of women in rural areas. These efforts range from microcredit schemes to women's rights education, vocational training, and initiatives designed to

increase women's political participation. Despite these efforts, the survey results suggest that the overall satisfaction with government initiatives is low, with the majority of respondents expressing dissatisfaction.

The lack of satisfaction with governmental efforts can be attributed to multiple factors, such as limited reach, insufficient impact, and the failure to address the root causes of gender inequality. First, many government programs targeting women's empowerment focus on surface-level interventions, such as offering small loans or providing basic educational training. While these programs may provide immediate assistance, they fail to address the underlying systemic issues that restrict women's agency, such as patriarchal social structures, lack of access to land and financial resources, and deeply ingrained gender norms. This failure to address structural inequalities results in programs that may appear effective on paper but have limited practical impact on the daily lives of rural women.

Furthermore, many government programs are often not tailored to the unique needs and realities of rural women in areas like Sindhupalchowk. While urban women may benefit from policies and services such as financial literacy workshops or mobile banking, rural women face additional challenges such as limited access to transportation, digital infrastructure, and education. In many cases, the remote nature of rural villages means that government initiatives do not reach the women who need them the most. Even when government programs do reach rural women, they are often poorly implemented or lack the resources to create lasting change. As a result, women in these communities may remain unaware of or unable to access the support available to them, perpetuating their exclusion from mainstream economic opportunities.

Socio-Cultural Norms and the Inadequate Impact of Governmental Programs

Another significant factor contributing to the dissatisfaction with government efforts is the influence of socio-cultural norms that shape women's roles in rural society. As the survey responses indicate, a substantial number of women in Sindhupalchowk continue to face limitations in terms of decision-making power and mobility due to entrenched patriarchal values (Q7, Q9). These cultural norms often undermine the effectiveness of government programs by reinforcing traditional gender roles, which dictate that women's primary responsibilities lie within the domestic sphere. Governmental initiatives that do not address these cultural norms may find limited success in empowering women, as these women remain

confined to roles that restrict their access to economic resources and opportunities.

For example, training programs and educational workshops aimed at enhancing women's skills may have limited impact if they do not challenge the underlying belief systems that prevent women from exercising their rights or accessing the labor market. In many cases, rural women may be unable to attend such programs due to familial responsibilities or cultural expectations that prioritize their duties within the home. Additionally, when women do attend such programs, they may face societal pressures that limit their ability to apply their new skills in ways that challenge the gendered status quo. As a result, government efforts to promote women's empowerment may be undermined by the persistent influence of patriarchal and traditional values.

Furthermore, many rural women in Sindhupalchowk face significant barriers to access when it comes to information about government initiatives. The lack of widespread awareness about available programs, coupled with limited access to communication channels such as the internet or mobile phones, means that many women are simply unaware of the resources available to them. This is particularly evident in the survey results, where a significant number of women reported limited access to information about government services and programs. Without adequate access to information, rural women are unable to take full advantage of the programs designed to support them, thus perpetuating their marginalization.

The Role of Government in Mobile Phone Access and Digital Inclusion

An important aspect of women's economic empowerment in the digital age is their access to mobile phones and digital technologies. The survey results indicate that a majority of women in Sindhupalchowk (23 out of 25) use mobile phones, and many recognize the potential benefits these devices offer in terms of communication, business, and access to emergency services (Q12, Q13). However, the government's role in ensuring equitable access to mobile phones and digital infrastructure remains limited. While mobile phone penetration has increased in rural Nepal, significant disparities remain in terms of affordability, network coverage, and digital literacy, particularly among women.

One of the key barriers to digital inclusion for rural women is the cost of mobile phones and mobile data, which can be prohibitive for many households. While some government initiatives have attempted to provide subsidies or discounts for mobile services, these efforts

have not been widespread enough to make a significant difference for most rural women. Moreover, mobile phones are often seen as secondary to other household priorities, such as food, health, and education. As a result, even when government programs aim to provide access to mobile technology, these efforts are often undermined by the prioritization of other immediate needs.

In addition to affordability, digital literacy remains a significant barrier to the effective use of mobile phones for economic empowerment. While some rural women may have access to mobile phones, they may lack the skills or knowledge necessary to use these devices effectively for purposes beyond communication. Government programs that focus solely on providing mobile phones or digital infrastructure, without accompanying efforts to enhance digital literacy, are unlikely to achieve the desired impact. As the survey results suggest, many women may not feel that owning a mobile phone contributes significantly to their development unless they are provided with the tools and knowledge to use these devices in ways that foster economic independence and social mobility (Q14).

Lack of Accountability and Transparency in Government Efforts

Another factor contributing to the dissatisfaction with government efforts is the perceived lack of accountability and transparency in the implementation of women's empowerment programs. Many rural women in Sindhupalchowk report feeling disconnected from the government and skeptical about the effectiveness of its initiatives. This sense of disengagement is compounded by a lack of follow-up or monitoring of government programs, which leads to a perception that these efforts are superficial or ineffective. Women may feel that the government's initiatives are driven more by external pressures or the desire to meet donor requirements, rather than a genuine commitment to improving their lives. As a result, they may view these programs with cynicism and frustration, feeling that their voices and needs are not adequately represented in the policymaking process.

Moreover, the unequal distribution of resources and the concentration of power in urban centers can further alienate rural women from government initiatives. With limited representation in decision-making bodies, rural women often find that government policies and programs do not reflect their specific needs or priorities. This lack of inclusivity further exacerbates the sense of disenchantment with government efforts and contributes to the perception that these programs are not designed with rural women's realities in mind.

In conclusion, the dissatisfaction with government efforts to improve the condition of rural women in Sindhupalchowk reflects a complex array of factors, including limited access to resources, insufficiently targeted interventions, and the influence of socio-cultural norms. While the government has made efforts to promote women's empowerment, these initiatives often fall short due to a lack of adequate infrastructure, financial support, and cultural sensitivity. To enhance the effectiveness of government programs and increase rural women's satisfaction with these efforts, it is essential to adopt a more holistic and inclusive approach that considers the specific challenges faced by rural women, addresses the underlying social and cultural barriers to empowerment, and ensures that women have the resources, information, and skills they need to fully participate in economic and social development. By doing so, the government can play a more substantial role in empowering rural women and bridging the digital divide that continues to hinder **their** progress.

5.5 Some Inherent Challenges

In the rapidly advancing digital era, mobile phones hold the potential to serve as powerful tools for social and economic empowerment, especially for rural women. They can facilitate access to information, enhance communication, provide business opportunities, and improve general connectivity. However, the ability of rural women in areas such as Sindhupalchowk, Nepal, to fully utilize mobile phones for empowerment is constrained by a variety of inherent challenges. These limitations are shaped by a combination of socio-cultural barriers, infrastructural inadequacies, economic constraints, and gendered expectations that restrict women's autonomy. While mobile phones can offer significant advantages, these challenges significantly hinder rural women from realizing their full potential in utilizing mobile technology to transform their lives. Despite the evident empowerment that mobile phones have facilitated for rural women in Sindhupalchowk, there are still several inherent challenges that persist in their usage, particularly related to social, cultural, and infrastructural barriers.

Theoretical Implications

The findings both corroborate and challenge the theoretical frameworks outlined in Chapter 2. Sen's Capability Approach was validated through cases like Subrita, where mobile access expanded her 'substantive freedoms' to start a catering business. However, Kabeer's Empowerment Framework requires modification - while mobile phones provided 'resources' (material access), the 'agency' component remained constrained by patriarchal norms (19/25

respondents reported male-dominated decision-making), demonstrating that technological access insufficiently translates to empowerment without structural gender reforms.

Putnam's Social Capital Theory was partially supported: mobile phones did strengthen bonding capital (e.g., Ratna's family networks) but limited bridging capital due to low social media adoption. The digital divide theory (Van Dijk, 2006) needs contextual refinement - while motivational and material access improved, skill access gaps persisted, particularly among older respondents (see Fig.4 age distribution), showing how lifecycle stages mediate technology adoption

The stories of Ratna and Subrita reveal how, even as mobile phones have provided opportunities for economic independence, they remain constrained by deeply ingrained societal norms and the limitations of rural infrastructure. These challenges reflect the broader themes of digital divides and the uneven nature of empowerment, even when technology is available.

Ratna Thapa' s Struggle with Socio-Cultural Constraints

Ratna' s journey showcases the tension between technological empowerment and the societal norms that govern gender roles in rural Nepal. While Ratna has successfully used mobile phones to manage her rental income and stay in touch with her husband, who works abroad, she still faces significant limitations imposed by the patriarchal structure of her family and community. Despite her ability to take on responsibilities traditionally handled by men, her household decisions—such as the management of agricultural resources or financial spending—are still largely influenced by her husband, as noted in Q7 of the survey, which highlights that most decisions regarding household activities are made by men. Even though she manages her income and activities through mobile phones, Ratna' s autonomy is curtailed by the pervasive influence of male authority in the family.

Moreover, Q9 from the survey sheds light on the impact of socio-cultural norms and religion on women' s position within their families. Ratna mentions the restrictions on mobility and the lack of inheritance rights, which are common obstacles for many women in rural Nepal. These socio-cultural limitations mean that even though mobile phones provide new opportunities for financial independence, they cannot fully overcome the barriers of patriarchal control and gender-based expectations. Ratna' s story reflects a broader theme in

the survey data: while mobile phones empower women economically, they do not necessarily challenge or alter the traditional gender roles that define women's positions in their households and communities. Her experience suggests that without broader societal changes — such as shifts in gender norms or more equitable power dynamics within families — technological advancements alone may not be enough to fully empower women.

Subrita' s Encounter with Technological Barriers

Subrita' s entrepreneurial success through mobile phones illustrates the potential of mobile technology to generate economic opportunities, but it also highlights the technical challenges faced by women in rural areas. While she has been able to develop a successful catering business and expand her operations by employing 20 other women, Subrita faces ongoing struggles related to the rural infrastructure and mobile technology. In particular, the lack of reliable network connectivity and internet services in remote areas poses significant barriers to the consistent use of mobile phones for business purposes. Q8 of the survey indicates that many rural women still face difficulties in accessing or effectively using mobile phones due to poor network coverage, which further complicates the utilization of these devices for economic activities.

Subrita herself mentions how rural infrastructure often limits the effectiveness of mobile phones for running a business. In areas with inconsistent or weak mobile network coverage, communication can be delayed, affecting everything from placing orders to coordinating delivery services. These logistical issues can severely hinder the smooth operation of businesses that rely on timely communication and connectivity. Moreover, while Subrita has managed to teach other women to use mobile phones for business, the lack of digital literacy training and technical support in rural areas means that many women are still left to figure out these technologies on their own. This creates a gap between women who are able to navigate these challenges and those who struggle due to limited technical resources or knowledge.

This technological divide, as exemplified in Subrita' s experience, aligns with the broader theme of digital divides discussed in the survey. While some women, like Subrita, are able to harness the full potential of mobile phones for business development, others face difficulties simply in accessing or using the technology due to infrastructure challenges. These challenges illustrate that while mobile phones have the potential to empower women economically, the uneven distribution of technology and services can exacerbate existing

inequalities, leaving some women at a disadvantage.

Ratna and Subrita's experiences highlight the complex relationship between mobile phone usage and economic empowerment in rural Nepal. Although both women have used mobile phones to enhance their economic activities and improve their livelihoods, they continue to face significant challenges. For Ratna, societal and cultural norms still place limitations on her autonomy, even as mobile phones have provided a tool for financial management. For Subrita, technological barriers related to network coverage and lack of digital literacy create obstacles to fully realizing the potential of mobile phones in her business.

These challenges reflect the broader themes of digital divides and gender inequality in rural areas. While mobile phones offer significant opportunities for economic empowerment, they do not automatically overcome the structural and infrastructural barriers that women face. Therefore, for mobile phone usage to truly lead to widespread empowerment, it is essential that broader socio-cultural norms are addressed and that rural infrastructure is improved to ensure equitable access to technology for all women.

Limited Access to Mobile Phones and Affordability Issues

One of the most fundamental challenges faced by rural women in Sindhupalchowk, as highlighted in the survey results, is limited access to mobile phones. While a large proportion of respondents reported owning mobile phones (23 out of 25), it is important to consider the broader context of mobile phone ownership in rural communities. In many cases, mobile phones are shared within the family or are considered a secondary priority in household spending. Women, especially those from lower-income households, may not have the financial autonomy to purchase a mobile phone themselves. In instances where women do own mobile phones, the devices are often basic models with limited functionalities, restricting their ability to take full advantage of digital tools such as mobile banking, online education, and e-commerce platforms.

The cost of mobile phones and associated services, such as data plans, can also be a significant barrier to usage. As indicated in the survey, only a small proportion of respondents (7 out of 25) use government-subsidized mobile services, with most opting for private service providers because they offer better connectivity (Q17). Despite this, the cost of data plans and mobile services remains a burden for many rural women. With limited access to disposable

income, women are often forced to prioritize other household needs, such as food, education, and healthcare, over mobile services. This financial strain prevents many rural women from fully utilizing their mobile phones to access online resources or connect with the broader world outside their local communities.

Inadequate Digital Literacy and Skills

Another significant challenge that impedes the ability of rural women to use mobile phones effectively for empowerment is inadequate digital literacy. Many women in Sindhupalchowk, particularly those with limited formal education, struggle to navigate smartphones and other digital technologies. As the survey results suggest, while the majority of women use mobile phones, the extent to which they can leverage these devices for economic empowerment is limited by their knowledge of how to utilize digital tools (Q12, Q14). Even when women own smartphones, they may not possess the necessary skills to use them for activities such as online banking, digital marketing, or accessing educational platforms.

The lack of digital literacy is exacerbated by insufficient training programs and resources in rural areas. Although there are some efforts by government and non-governmental organizations (NGOs) to promote digital literacy, these programs are often not widespread or accessible to all rural women. Furthermore, the training that does exist may not be tailored to the specific needs and realities of rural women, such as their responsibilities within the household or their limited access to continuous internet connectivity. As a result, women may find it difficult to adapt to the technological requirements of mobile phones, hindering their ability to use these devices for more than basic communication.

Socio-Cultural Barriers and Gender Norms

The social and cultural environment in which rural women live plays a significant role in shaping their ability to utilize mobile phones for empowerment. As indicated in the survey results, socio-cultural norms and gendered expectations often restrict women's autonomy and freedom of action. The decision-making power in most households is still predominantly held by male family members, with 19 out of 25 respondents indicating that household activities are primarily decided by men (Q7). These patriarchal structures limit women's access to resources, including mobile phones, and dictate how and when they can use them. Even when women do have access to mobile phones, they may face restrictions on how frequently they can use the devices or for what purposes.

In some cases, cultural attitudes towards women's mobility further limit their ability to make full use of mobile phones. Women in rural Nepal are often expected to prioritize domestic responsibilities, such as childcare and household chores, over external activities like work or education. This confinement to the household sphere can limit the opportunities women have to use mobile phones for empowerment. Furthermore, gender norms may prevent women from seeking help or information through digital platforms, as doing so may be perceived as challenging traditional roles or going against societal expectations.

The influence of religion and cultural traditions can also play a role in limiting women's agency. As noted by several respondents in the survey, women often face restrictions on their mobility, which affects their ability to access services and resources that could help them fully utilize mobile phones (Q9). The lack of mobility further exacerbates the digital divide, as women who are confined to their homes may not have the opportunity to participate in training programs or access the internet in public spaces, such as internet cafes or community centers.

Limited Network Infrastructure and Connectivity Issues

In rural areas like Sindhupalchowk, mobile network infrastructure is often inadequate, making it difficult for women to reliably access mobile services. As the survey results reveal, a significant number of respondents use private mobile service providers, with 18 out of 25 preferring them for better connectivity (Q17). However, even private providers struggle to ensure consistent service in remote areas. Poor network coverage, slow internet speeds, and frequent disruptions in service are common challenges that prevent women from fully utilizing their mobile phones for activities such as online learning, accessing market information, or communicating with others.

These connectivity issues are particularly problematic for women who rely on mobile phones for business-related activities. For instance, women involved in small businesses may struggle to receive timely orders, communicate with suppliers, or promote their products online due to connectivity issues. This can limit their ability to expand their businesses and generate income, further entrenching their economic dependence.

Privacy and Security Concerns

Another critical challenge that rural women face when using mobile phones is privacy and

security concerns. In patriarchal societies like that of rural Nepal, women may have limited control over their personal devices. Their mobile phones may be monitored by male family members, especially if the devices are shared within the household. This lack of privacy can discourage women from using mobile phones to access sensitive information, such as financial services, health advice, or educational resources, for fear of scrutiny or punishment. Furthermore, concerns about digital harassment and the misuse of personal data may discourage women from fully engaging with digital platforms, thus limiting their opportunities for empowerment.

The fear of surveillance and lack of control over their devices may also prevent women from using mobile phones to network or connect with other women and support groups. In a society where women's mobility and social interactions are already restricted, the inability to communicate freely through mobile phones further reinforces their sense of isolation and dependence.

While mobile phones hold the potential to empower rural women by providing access to information, economic opportunities, and social networks, a variety of inherent challenges continue to limit their effectiveness. Issues such as limited access to devices, lack of digital literacy, socio-cultural restrictions, inadequate network infrastructure, and privacy concerns create significant barriers to women's full utilization of mobile phones for empowerment. These challenges must be addressed through targeted interventions that take into account the unique needs and constraints of rural women in areas like Sindhupalchowk. By providing affordable access to mobile technology, offering digital literacy programs, addressing gendered social norms, and improving network infrastructure, it is possible to unlock the transformative potential of mobile phones and bridge the digital divide that hinders rural women's progress. Only then can mobile phones truly serve as tools for the empowerment of rural women in Nepal.

The findings from the survey conducted among 25 rural women in Sindhupalchowk, Nepal, offer valuable insights into how mobile phone usage intersects with the broader themes of digital divides and empowerment. The role of mobile phones in facilitating or hindering economic and social empowerment among rural women is inextricably linked to the digital divide that exists in both local and global contexts. The digital divide refers to the gap between those who have easy access to information and communication technologies (ICTs)

and those who do not, often due to geographical, economic, or socio-cultural factors. In rural areas like Sindhupalchowk, the digital divide manifests in various forms, including limited access to mobile phones, inadequate digital literacy, and poor network infrastructure. These issues directly influence the empowerment potential of mobile phones for women in these communities. By examining the survey results, it becomes evident that although mobile phones have the potential to empower rural women, various barriers limit their effectiveness, highlighting the need for targeted interventions to bridge the digital divide and foster true empowerment.

The Role of Mobile Phones in Empowerment

Mobile phones are increasingly seen as tools for empowerment, providing individuals with access to information, communication, and economic opportunities. In rural Nepal, mobile phones have the potential to overcome some of the challenges posed by geographic isolation and limited access to traditional forms of information dissemination. According to the survey results, a significant majority of women (23 out of 25) use mobile phones, with many respondents acknowledging the positive benefits of mobile phone usage. These benefits include enhanced communication, access to business information, and the ability to seek emergency help, which are all critical components of empowerment. The empowerment of rural women through mobile phones can be understood in the context of increased access to resources, economic participation, and the ability to engage with broader social networks, which are essential for personal development and collective social change.

However, empowerment through mobile phones is not a one-size-fits-all process. While many respondents feel that mobile phones have positively affected their daily lives by improving connectivity and providing better market information (Q16), others report negative impacts, such as increased expenses (Q16). These mixed responses highlight the complexity of the relationship between technology and empowerment. While mobile phones can empower rural women by offering financial inclusion opportunities, enabling them to access new markets or make transactions, they also come with costs that may further strain household finances, particularly in a context where women have limited access to economic resources and decision-making power.

The survey responses further reveal that mobile phones can contribute to a sense of development and empowerment for rural women, with 19 respondents affirming that mobile

phone ownership has made them feel more empowered (Q14). This sentiment aligns with the concept of economic empowerment, where women can access financial services, engage in digital entrepreneurship, and improve their skills through mobile-based learning platforms. However, the lack of universal access to mobile phones, particularly among the poorest women in rural communities, suggests that mobile phone ownership alone is not sufficient to close the digital divide or ensure the empowerment of women in these areas.

Digital Divides and Access to Technology

The concept of the digital divide is central to understanding the limitations of mobile phone usage as a tool for empowerment among rural women in Sindhupalchowk. The digital divide refers to the disparities in access to technology and information between different populations, often based on geographic, economic, and social factors. The survey results illustrate how the digital divide manifests in rural Nepal, where access to mobile phones is not universal, and the use of mobile phones for empowerment purposes is influenced by socio-economic status, education, and infrastructure.

While 23 of the 25 respondents reported owning a mobile phone, it is important to recognize that ownership does not equate to equal access to the benefits that mobile phones can offer. The majority of rural women in the study share mobile phones within their households, and the devices they own are often basic models with limited functionality (Q12). This form of shared ownership may limit women's autonomy and their ability to use mobile phones as tools for personal and economic growth. Moreover, the affordability of mobile phones and associated services remains a significant barrier. As indicated by the survey results, women often face financial constraints that prevent them from purchasing more advanced mobile phones or subscribing to expensive data plans that would enable them to access a wider range of services, such as e-commerce or mobile banking. The affordability issue is compounded by the fact that mobile phone expenses may compete with other basic household needs, such as food, healthcare, or education, leaving limited room for investment in technology.

In rural areas where economic activity is often centered around agriculture, women may have less access to disposable income or the economic autonomy required to purchase mobile devices or services independently. This economic dependence exacerbates the digital divide, as it prevents women from fully engaging with the technological advancements that could help them become more economically independent. As seen in the survey, only 8 respondents

report having easy access to the family's monthly income (Q8), reflecting the wider issue of financial dependence among rural women. This economic dependency limits women's control over resources, including mobile phone usage, and consequently their ability to harness the empowering potential of mobile technology.

The digital divide is not only shaped by economic and infrastructural factors but is also deeply influenced by socio-cultural and gendered barriers. In rural Nepal, deeply entrenched gender norms and patriarchal structures limit women's autonomy and restrict their ability to use mobile phones to their full potential. As highlighted in the survey, a significant number of respondents (14 out of 25) reported that socio-cultural norms and religion influence their position within their families, including restrictions on mobility and limited decision-making power (Q9). These gender norms reinforce women's dependency on male family members, thereby curbing their ability to engage in activities such as business ventures, education, or networking through mobile phones.

The fact that 19 out of 25 respondents reported that household activities are primarily decided by men (Q7) further reflects the limited agency of women in household decision-making. This patriarchal structure not only affects women's freedom to use mobile phones but also constrains their access to the resources necessary for empowerment. Women in such environments may face resistance from male family members when attempting to use mobile phones for purposes that challenge traditional gender roles, such as seeking financial independence or pursuing entrepreneurial opportunities. As a result, mobile phones may become an extension of the patriarchal structure, rather than a tool for subverting or transforming it.

In addition, cultural expectations around women's roles within the household—often focused on caregiving, cooking, and cleaning—may prevent women from using mobile phones to access information or engage in social and economic activities. As noted in the survey, 18 out of 25 respondents agree that women face restrictions in decision-making and financial dependence (Q15), which are direct outcomes of the prevailing socio-cultural norms. This lack of autonomy limits women's ability to engage fully with digital platforms, further deepening the digital divide between men and women.

The Role of Government and NGOs

The role of government and non-governmental organizations (NGOs) in addressing the digital divide and promoting women's empowerment is another critical aspect of this discussion. While the survey results suggest that many respondents (18 out of 25) believe that NGOs play a positive role in economic empowerment through training programs and awareness campaigns (Q6), the effectiveness of these interventions is still limited by the broader socio-economic and cultural context. Moreover, the satisfaction with government efforts to improve the condition of women in society was low, with only 8 respondents expressing satisfaction (Q18), highlighting the gap between the government's intentions and the actual impact on women's empowerment. This dissatisfaction may stem from the inadequacy of government programs to address the specific needs of rural women, particularly those living in remote areas with limited access to digital technology.

Despite the efforts of NGOs and the government, rural women in Sindhupalchowk continue to face systemic barriers to digital access and empowerment. For these initiatives to be more effective, they must address not only the technological aspects of empowerment but also the socio-cultural norms that restrict women's agency and autonomy. Empowerment cannot be achieved through technology alone; it requires a holistic approach that includes economic, social, and cultural transformations. This approach should focus on providing access to affordable mobile technology, improving digital literacy, challenging gender norms, and ensuring that women have the support and resources needed to fully utilize mobile phones for empowerment.

Chapter 6

Summary and Conclusion

6.1 Summary of Key Findings

Overview of Study

This study delves into the role of mobile phone usage in the economic empowerment of rural women in Sindhupalchowk, Nepal. The focus is on understanding how mobile phones, as a form of digital technology, enable rural women to engage in economic activities, improve their financial independence, and negotiate within the socio-cultural framework of their communities. The research is grounded in an ethnographic approach, blending both qualitative and quantitative methods. To achieve this, the study conducted surveys with 25 rural women and supplemented the quantitative data with in-depth interviews. The aim was to capture both the broader socio-economic patterns in mobile phone usage and the more nuanced, individual experiences of rural women navigating this technology.

The primary themes that emerged from the study include mobile phone usage, economic empowerment, and the socio-cultural context of rural Nepal. By exploring these themes, this study provides insight into how rural women are using mobile phones not just for communication but as a tool for economic activity. The study also sheds light on the challenges these women face, particularly in the context of traditional gender norms, and how these norms sometimes limit the effectiveness of mobile phones as an empowering tool. The findings indicate that while mobile phones hold the potential to enhance economic independence, socio-cultural barriers and digital divides persist in limiting their impact.

Key Findings from Survey Data

The survey data offers a comprehensive overview of the demographic characteristics of the rural women in Sindhupalchowk. The respondents ranged in age from 20 to 65 years, with a majority falling between the ages of 30 and 45. The education levels of the respondents varied, but a significant portion had at least some form of basic education, though literacy levels remained relatively low. In terms of occupation, most women were engaged in agriculture, with some participating in small-scale business activities, such as sewing, catering, and retailing goods.

Regarding mobile phone ownership, the results were striking: 23 out of the 25 respondents owned mobile phones, reflecting a high level of access to mobile technology. This was an important finding, as it highlights the pervasiveness of mobile phones in rural Nepal, even in areas that are often considered underdeveloped. The primary uses of mobile phones were for communication, including staying in touch with family members, especially those working abroad, and for business purposes. Mobile phones also played a role in receiving remittances, managing household finances, and conducting small-scale transactions.

In terms of economic empowerment, the majority of the respondents reported that mobile phones had a positive impact on their ability to manage financial resources. Specifically, many noted that mobile phones facilitated communication with family members working in India and the Middle East, allowing them to receive remittances and manage household expenses. A significant number of respondents also indicated that mobile phones helped them expand their business activities, such as catering or small-scale retailing.

However, challenges persist. Despite the widespread ownership of mobile phones, respondents indicated that decision-making within households was still predominantly male-dominated. This reflects the continuing influence of gender norms on economic empowerment, as men were often the primary decision-makers when it came to the allocation of resources, even when women were responsible for household finances. Additionally, although mobile phones were seen as empowering tools, they were not always sufficient in overcoming these gendered power structures, as the control of income and resources still rested largely in the hands of male family members.

Key Findings from In-depth Interviews

The in-depth interviews provided a deeper, more personal perspective on how mobile phones are being used by rural women in Sindhupalchowk. Ratna Thapa, a 52-year-old woman whose husband works as a seasonal migrant worker in India, shared her experience of how mobile phones helped her manage household finances and stay connected with her husband. Her story illustrates the ways in which mobile phones can facilitate communication across borders, enabling rural women to manage economic activities, even when family members are physically absent. Through mobile phones, Ratna was able to receive rental income from tenants, stay in touch with her husband, and handle household financial matters independently. However, her experience also highlights the continued presence of patriarchal norms. Although mobile phones provided her with greater control over household finances, she still

had to navigate a household dynamic where her husband's decisions held significant weight, even when he was away. This reveals that while mobile phones can empower women economically, the full realization of this potential is often constrained by the social and cultural structures in which these women live.

Subrita, a 28-year-old entrepreneur, shared her experience of using mobile phones to run a small catering business. Subrita began by using her phone to take orders and coordinate with her employees, and she gradually expanded her business by employing other women in her community. Her story demonstrates how mobile phones can enable rural women to engage in economic activities outside of traditional agricultural roles. She used the phone to connect with her customers and manage her business operations, making the process of running her small enterprise more efficient. Moreover, Subrita's use of mobile phones provided an opportunity for other women to become involved in economic activities, as she employed and trained women to work in her catering business. However, Subrita's experience also underscores the technological barriers that still exist in rural areas. She faced significant challenges related to unreliable mobile networks, especially in remote areas, which hindered her ability to efficiently run her business. Moreover, Subrita noted that many of the women she employed initially lacked digital literacy, which posed an additional challenge to the effective use of mobile phones for business purposes. This highlights the gap between the potential of mobile phones and the reality of their use in rural communities.

6.2 Implications of Findings

Economic Empowerment through Mobile Phones

The findings from this study strongly support the argument that mobile phones have the potential to enhance economic opportunities for rural women. Mobile phones provide rural women with access to financial resources, business opportunities, and social networks that were previously inaccessible. The survey data and in-depth interviews show that mobile phones enable women to manage their finances, stay in touch with family members, and expand their economic activities. For instance, women like Ratna and Subrita have used mobile phones to receive remittances, manage household income, and engage in small-scale businesses, providing them with a degree of economic independence.

The survey data also reveal that mobile phones contribute to women's participation in both local and global markets. Through mobile phones, women can access information about

prices, suppliers, and potential customers, which helps them engage in income-generating activities. This is particularly important in rural areas, where information about market opportunities and prices is often scarce. Furthermore, mobile phones enable rural women to participate in the digital economy, opening up new avenues for economic activity.

However, it is important to note that the economic empowerment enabled by mobile phones is not universal. While mobile phones have undoubtedly facilitated the economic activities of some rural women, the degree of empowerment varies depending on factors such as education, digital literacy, and access to technology. Women who are more digitally literate and have access to reliable mobile networks are better positioned to leverage mobile phones for economic empowerment, while those with limited access to technology or lower levels of digital literacy face significant challenges.

Social and Cultural Barriers to Empowerment

Despite the economic benefits of mobile phone usage, the study also highlights the persistent social and cultural barriers that limit women's full empowerment. Both Ratna and Subrita's experiences demonstrate that while mobile phones provide new opportunities for economic activity, they cannot fully overcome the gendered power structures that persist in rural Nepal. In both cases, women faced challenges related to patriarchal decision-making and cultural norms that limited their autonomy. For example, Ratna's experience shows that even though she used mobile phones to manage household finances, her husband's decisions still carried significant weight. Similarly, Subrita's story reveals that many of the women she employed had to overcome societal expectations and gendered roles in order to engage in economic activities.

The survey data also reflect the persistence of gender-based restrictions in household decision-making. Although mobile phones provide women with greater access to financial resources, they are still often excluded from the decision-making processes that affect the allocation of those resources. This is particularly evident in rural households, where men are typically the primary decision-makers when it comes to family income and financial matters.

Digital Divides and Technological Barriers

The findings also underscore the challenges posed by the digital divide and technological barriers. Despite the widespread ownership of mobile phones, access to reliable mobile

networks and digital literacy remain significant obstacles. Subrita's experience illustrates how unreliable mobile networks in rural areas can hinder the effective use of mobile phones for business purposes. Moreover, many rural women lack the necessary digital skills to fully leverage mobile phones for economic activities, which further limits their potential for empowerment.

The digital divide is particularly pronounced in rural areas, where infrastructure is often lacking, and mobile network coverage is uneven. This creates a gap between those who have access to reliable mobile technology and those who do not. As a result, rural women who lack access to high-quality mobile networks or who are not digitally literate are at a disadvantage when it comes to using mobile phones for economic empowerment.

The challenges posed by digital divides and technological barriers highlight the need for targeted policies and initiatives aimed at improving digital literacy and expanding mobile network coverage in rural areas. Without addressing these challenges, the potential of mobile phones to empower rural women will remain limited.

In conclusion, while mobile phones offer significant opportunities for economic empowerment among rural women, they are not a panacea. The challenges of social and cultural norms, as well as technological barriers, must be addressed in order for mobile phones to reach their full potential as a tool for empowerment. The findings of this study suggest that while mobile phones have the potential to enhance women's economic opportunities, the full realization of this potential requires a multifaceted approach that includes addressing digital divides, improving digital literacy, and challenging gendered power structures.

6.3 Conclusion

Conclusion on Mobile Phones and Economic Empowerment

In conclusion, mobile phones have proven to be a significant tool for economic empowerment among rural women in Sindhupalchowk, Nepal. However, the extent to which mobile phones can promote sustained economic independence and empowerment is nuanced, shaped by a variety of socio-cultural, economic, and technological factors. The findings from this study confirm that mobile phones provide rural women with greater access to financial resources, entrepreneurial opportunities, and social networks. These digital tools facilitate the

management of household income, enable women to engage in small business ventures, and provide a means for staying connected with family members, particularly those working abroad. For many women, mobile phones are not only a lifeline for communication but also serve as key enablers of economic activities that were once beyond their reach.

Despite these benefits, the impact of mobile phones is far from straightforward. While mobile phones can open up new opportunities, their role in economic empowerment is constrained by persistent cultural norms and gendered power dynamics. In rural areas like Sindhupalchowk, traditional gender roles still dictate much of the decision-making power within households and communities. For example, even though women have access to mobile phones and use them for managing finances or conducting business, they often remain excluded from the decision-making processes that affect how financial resources are allocated. Patriarchal norms continue to shape the extent to which women can freely utilize the economic opportunities presented by mobile phones.

Additionally, infrastructural limitations, such as unreliable mobile networks and limited access to digital literacy programs, restrict the full potential of mobile phones as tools for empowerment. In remote areas, where mobile networks are often patchy and access to the internet can be intermittent, the capacity of women to fully exploit the business and economic advantages of mobile phones is severely hampered. These technological barriers must be addressed in order for mobile phones to achieve their full empowering potential.

The study also underscores that the empowerment facilitated by mobile phones is not just an individual achievement but a collective one that must consider the broader socio-cultural context. While mobile phones can undoubtedly provide rural women with access to new economic opportunities, their ability to sustain these opportunities over time is deeply tied to their social standing, education, and the broader societal changes that challenge traditional gender norms. Therefore, while mobile phones can empower women economically, they must be viewed as part of a larger framework that includes efforts to challenge socio-cultural norms, improve infrastructure, and provide educational resources.

The findings of this study suggest several policy and practical recommendations that could help maximize the potential of mobile phones in empowering rural women in Nepal and similar contexts. First, there is a pressing need to improve digital literacy and access to

mobile technology in remote areas. Mobile phone literacy programs, tailored to the needs of rural women, would go a long way in helping them better utilize mobile phones for economic activities. Such programs should not only cover the basics of phone usage but also teach women how to leverage mobile phones for managing finances, conducting business, and accessing vital services. This would help bridge the digital divide and ensure that women are equipped to use mobile technology to its fullest potential.

Second, addressing socio-cultural norms remains a critical aspect of empowering rural women through mobile phones. While mobile phones can offer significant economic benefits, their potential is constrained by deeply ingrained gendered expectations and patriarchal decision-making processes. Programs that target gender equality within both the household and the community are essential for creating an environment in which women can truly take advantage of the opportunities presented by mobile phones. These programs should focus on educating both men and women about gender equality, promoting shared decision-making in households, and encouraging women to take on leadership roles within their communities. Empowering women economically through mobile phones will not be fully realized unless efforts are also made to dismantle the social structures that limit their autonomy.

Third, it is crucial to promote initiatives that enhance women's decision-making power, particularly when it comes to managing family income and agricultural activities. Mobile phones can be a valuable tool in this regard, but their potential will be limited if women do not have the authority to make financial decisions. Programs that focus on empowering women to manage household resources, engage in financial planning, and take ownership of their economic activities are key to ensuring that mobile phones contribute to greater autonomy and economic freedom. These initiatives should focus on building women's confidence, decision-making skills, and economic knowledge, which would allow them to fully capitalize on the benefits of mobile phone usage.

Discussion and Comparison with Theory

The findings of this study provide valuable insights into the role of mobile phones in the economic empowerment of rural women in Sindhupalchowk, Nepal. These findings can be better understood and contextualized by comparing them with existing theoretical frameworks discussed in the literature review.

Amartya Sen's Capability Approach

Amartya Sen's Capability Approach emphasizes that development should focus on expanding individuals' freedoms to achieve well-being and pursue a life they value. In this study, mobile phones have been shown to enhance the capabilities of rural women by providing access to financial services, market information, and communication networks. For example, the ability to access market prices and financial services through mobile phones has increased women's income and control over resources, which are key capabilities in the context of economic empowerment. However, the study also highlights that the expansion of capabilities is not uniform across all women. Factors such as digital literacy and socio-cultural norms play a significant role in determining how effectively women can utilize mobile phones to enhance their capabilities. This is consistent with Sen's argument that the conversion of resources into capabilities is influenced by individual and contextual factors.

Naila Kabeer's Empowerment Framework

Naila Kabeer's Empowerment Framework, which focuses on resources, agency, and achievements, provides a comprehensive lens through which to analyze the economic empowerment of rural women. The study's findings indicate that mobile phones have contributed to women's empowerment by enhancing their access to resources (such as market information and financial services) and agency (the ability to make decisions and act on them). For instance, women's use of mobile phones to manage household finances and engage in business activities reflects their increased agency. However, the study also reveals that the achievement of empowerment is constrained by socio-cultural and structural barriers. The persistence of patriarchal norms and limited decision-making power within households illustrates that access to resources and agency alone are not sufficient for empowerment. This resonates with Kabeer's assertion that empowerment is a process that involves not only the acquisition of resources but also the ability to use them effectively to achieve desired outcomes.

Social Capital Theory

Robert Putnam's Social Capital Theory, which highlights the role of social networks and relationships in facilitating economic empowerment, is also relevant to this study. The research shows that mobile phones have strengthened social capital among rural women by enabling them to build and maintain networks that provide access to economic resources and information. For example, women have used mobile phones to connect with buyers, suppliers,

and other women entrepreneurs, creating new economic opportunities. However, the study also cautions that social capital can be exclusive and may reproduce inequalities if access to networks is unevenly distributed. This underscores the need for policies that ensure equitable access to social capital-building opportunities through mobile technology.

Digital Divide Theories

The study's findings are also consistent with digital divide theories, which highlight the disparities in access to and use of digital technologies. The research reveals that while mobile phones have the potential to bridge the digital divide and provide new opportunities for economic participation, their benefits are unevenly distributed. Factors such as gender, education, and socio-economic status influence women's ability to access and effectively use mobile phones. This aligns with the argument that the digital divide is not merely a technological issue but is deeply intertwined with broader socio-economic inequalities.

By situating the study's findings within these theoretical frameworks, we gain a deeper understanding of the complex interplay between technology, socio-cultural norms, and economic empowerment. These theories not only validate the study's conclusions but also provide a foundation for future research and policy development aimed at maximizing the potential of mobile technology for the economic empowerment of rural women

6.4 Limitations and Areas for Future Research

While this study offers valuable insights into the role of mobile phone usage in the economic empowerment of rural women, there are several limitations that must be acknowledged. First, the sample size of 25 women, while providing important qualitative and quantitative data, is relatively small and may not fully represent the diversity of experiences among rural women in Sindhupalchowk or other rural areas of Nepal. A larger sample size would provide a more comprehensive understanding of the broader patterns of mobile phone usage and empowerment in rural contexts.

Second, the geographic scope of this study is limited to Sindhupalchowk, a single district in Nepal. While the findings are significant for this region, the results may not be fully applicable to other rural areas in Nepal or in other South Asian countries with different cultural, economic, or infrastructural contexts. Further research is needed to explore how mobile phones impact rural women's economic empowerment in other regions, both within Nepal and across South Asia, to determine whether the findings can be generalized.

Third, this study relied on self-reported data from surveys and interviews, which may be subject to biases such as social desirability bias or recall bias. Participants may have overestimated their usage of mobile phones or their level of empowerment due to the social value placed on technological advancement and economic independence. While efforts were made to minimize these biases through qualitative methods, they still represent a limitation of the study.

Suggestions for Future Research

Given the limitations of this study, future research should seek to expand on the findings presented here. Longitudinal studies would be particularly useful in exploring the long-term effects of mobile phone usage on women's economic independence in rural areas. A longitudinal approach would allow researchers to track the evolution of women's economic activities over time and determine whether mobile phone usage results in sustained changes in economic empowerment.

Additionally, comparative research in other rural areas of Nepal or South Asia would help to understand the broader applicability of these findings. While this study provides valuable insights into the experiences of rural women in Sindhupalchowk, it is important to determine whether similar patterns exist in other regions or whether there are unique regional factors that influence the relationship between mobile phone usage and economic empowerment. Comparative studies could also examine the role of mobile phones in different cultural and socio-economic contexts within South Asia, providing a more comprehensive understanding of how mobile phones are shaping gender dynamics and economic opportunities in rural areas.

Lastly, future research should investigate the role of mobile phones in addressing gender-based violence and other social issues that affect rural women. As mobile phones provide women with access to information, social networks, and services, they may also serve as tools for combating gender-based violence, improving access to healthcare, or promoting legal and social advocacy. Exploring these broader social issues will provide a deeper understanding of the full potential of mobile phones in transforming the lives of rural women and their communities.

In conclusion, while mobile phones are a powerful tool for economic empowerment among

rural women in Sindhupalchowk, Nepal, their effectiveness is constrained by socio-cultural norms, digital divides, and infrastructural barriers. Addressing these limitations through targeted policies and programs will help ensure that mobile phones can truly serve as a transformative tool for rural women, enabling them to achieve greater autonomy, economic independence, and social equality. Further research will be essential in understanding how mobile phones can contribute to broader social change, and in developing strategies to overcome the challenges that continue to limit their potential.

Appendix

Table

Penetration of Mobile phones

Services	Total 2010	Total 2016	Total 2017
Fixed	820,534	846,940	857,261
Mobile	6,512,130	27,516,055	34,876,325
Others	285,105	846,335	84,7316
Total	7,617,769	29,209,330	36,580,902
Penetration Rate %	–		–
Fixed	2.98	3.20	3.24
Mobile	23.68	103.86	131.64
Others	1.04	3.19	3.20
Total	27.70	110.25	138.07

Table 1. Mobile penetration rates of the years 2010,2016 and 2017. (Source:cbs.gov.np)

GDP	Last	Reference	Previous	Range	Frequency
GDP Annual Growth Rate	6.3%	Dec/17	7.9	0.1:8.6	Yearly
GDP	21.14 USD Billion	Dec/16	21.31	0.5:21.31	Yearly
GDP per capita	682 USD	Dec/16	686	267:686	Yearly
GDP per capita PPP	2288 USD	Dec/16	2301	119 8: 230 1	Yearly
GDP Constant Prices	825049 Million Rupees	Dec/16	767492	44204 9: 82504 9	Yearly
GDP From Agriculture	247691 NPR Million	Dec/16	235330	15841 7: 24769 1	Yearly

GDP From Construction	45672 NPR Million	Dec/16	40904	2722 5: 4567 2	Yearly
GDP From Manufacturing	52408 NPR Million	Dec/17	48510	3636 4: 5240 8	Yearly
GDP From Mining	3949 NPR Million	Dec/17	3575	197 7: 394 9	Yearly
GDP From Public Administration	16560 NPR Million	Dec/17	15113	7237 : 1656 0	Yearly
GDP From Services	112493 NPR Million	Dec/17	103152	6183 7: 1124 93	Yearly
GDP From Transport	85785 NPR Million	Dec/17	81384	3405 5: 8578 5	Yearly
GDP From Utilities	18070 NPR Million	Dec/17	17075	8631 : 1807 0	Yearly
Gross Fixed Capital Formation	271870 NPR Million	Dec/17	234961	84751 : 27187 0	Yearly

Table 2. The chart of GDP in different sectors of Nepal

Nepal GDP annual growth rate

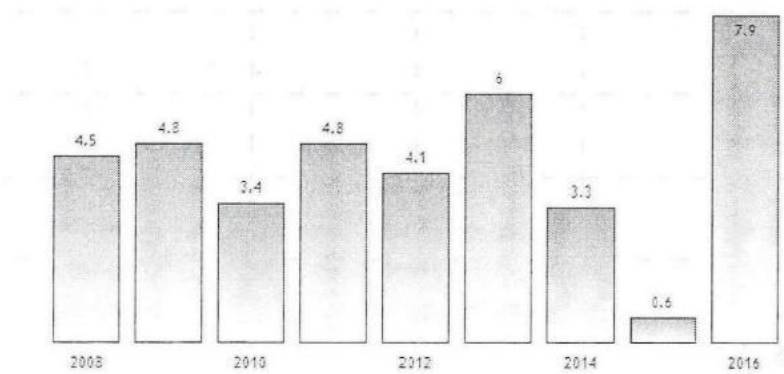


Table 3. Bar graph of Nepal's GDP with in 10 years

Survey data from the Questionnaire

(Q2-Q11 for woman empowerment, Q12-Q18 for digital divide)

Question	Yes/Agree/ Positive	No/Disagree/ Negative
Q2: Agreement with Women's Empowerment	15	10
Q3: Empowerment Leads to Societal Change	21	4
Q4: Economic Empowerment is Different	16	9
Q5: Education & Empowerment Importance	20	5
Q6: NGO Role in Empowerment	18	7
Q7: Household Decision-Making (Male vs Female)	19	6
Q8: Women's Access to Family Income	8	17
Q9: Influence of Socio-Cultural Norms	14	11
Q10: Comfort with Patriarchal Society	16	9
Q11: Economic Empowerment is Media Hype	6	19
Q12: Mobile Phone Usage	23	2
Q13: Mobile Phone Benefits	21	4
Q14: Mobile Phone as Development Tool	19	6
Q15: Problems or Suppression of Women	18	7
Q16: Mobile Phone Impact (Positive vs Negative)	20	5
Q17: Mobile Data Sector (Govt. vs Private)	7	18
Q18: Satisfaction with Govt. Efforts	8	17

Two In-depth Interview

Sindupalanchok, Nepal, October,9

Ratna Thapa (52 years old) She quotes, "Since my husband works in India now, I'm responsible for harvesting all our crops," Her husband, Pramod Thapa (59 years old), is one of at least 2.2 million Nepalese—nearly 10 percent of the population—who work abroad, according to the Nepal Institute of Development Studies. For the past three years, Pramod has been working seasonally in the Indian city of Haldwani as a miner. She says it pays him more than the daily agricultural job that he used to do here in Nepal. She further quotes, "Even though our major conversations are phone-based, but when he comes home with tons of goodies and merchandise, seeing my kids rejoice is priceless."

Ratna further tells us how mobile phones have made everything easy for her, she claims that mobile phones have helped her to be in touch with her sublets and receive her monthly rentals. "My lively daily hood with my kids are running because of this small technology." Ratna, for the past six months, however, has cultivated her patch of land and leased the remainder of it—1,700 square meters (18,299 square feet)—to other poor, low-caste farmers (Ethnically minority group) for their benefit as well. The outflow of male workers—in particular from rural areas faced with worsening climate conditions—has major implications for the country's agricultural sector, believes Madan Pariyar, project director at International Development Enterprises (IDE), a non-profit group that helps poor farmers with work and income opportunities. "Men going to find jobs in India and the Middle East leaves few to manage agricultural activities that were traditionally men's preserve," he said. "As a result, more women are taking charge of farming work and mobile phones help them to stay in touch with their husbands as well as do business with the crops."

Sindupalanchok, Nepal, October 20

Subrita (28 years old) quotes, "Mobile phone has helped me a lot not just with me but I have other 20 women working under me, I came up with a concept of tiffin", which means a small catering of lunchbox served in breakfast and lunch for people who work on the fields and don't have time or resources to cook food. She further says, "All orders are placed and delivered through mobile phones, and another 20 women who are working all own their own phones and they help me cook as well as deliver food."

Where older women, like 67 years old, also helped herself by establishing a sewing business where all her deliveries are also placed through mobile phones. She also has hired 15 other women who live in different peaks of the mountain, making it difficult for a regular meet-up. She further quotes, "After the death of my husband it was very hard for me to live a life, there were no sources of income, that's when my daughter gave me an idea which had me use mobile phones more often, it's been 5 years now that I have been running a small business with 15 other women, they have slowly started understanding the usage of using mobile phones, which is not just to be in touch with their family members, but also see the different perspectives of using a mobile phone." She further describes how her small business works.

The study area is actually a very mountainous region, that's why when the earthquake happened, there were major landslides which destroyed most of the houses and shelters. Communicating with each other means days of walking up and down the hills. Where wireless communication, like mobile phones, actually benefit them in several different ways.

Furthermore, a 32-year-old female also works in a small shop with a few little snacks and freshly made hot tea. In a group discussion of some young women, she shared her experiences saying, "When there was a landslide, when most blocked roads and water lines were blocked and there was nowhere to eat and cook. I held a small stall at the end of the village where I could find another water source and easier route to contact a person at the end of the basin and asking for help through mobile phone." She further says with a glitch and tears in her eyes, "Then I started distributing biscuits and freshly made hot cups of tea, eventually started charging for my services. Now, my daily wages and expenses are well reached, with twice as big of a stall than before with four times more of the food in the stall."

Conclusion: Commonalities Between the Two Respondents

Through the in-depth interviews with Ratna Thapa and Subrita, a clear pattern emerges regarding the role of mobile phones in enhancing the economic empowerment of rural women in Sindhupalchowk. Despite differences in age, occupation, and life experiences, both women demonstrate how mobile phones have significantly transformed their lives, particularly in the context of managing household and business responsibilities, overcoming socio-cultural barriers, and navigating economic challenges.

1. Empowerment through Economic Independence: Both Ratna and Subrita use mobile

phones as tools for economic independence, showing how technology can bridge the gender gap in traditionally male-dominated spaces. Ratna, managing both her agricultural responsibilities and rental income, emphasizes how mobile phones help her stay connected with her husband working abroad, ensuring financial stability despite his physical absence. Similarly, Subrita has successfully used mobile phones to establish and run a small catering business, providing meals to field workers. By managing orders and delivery through mobile technology, Subrita has not only empowered herself but also created economic opportunities for other women, allowing them to engage in small-scale entrepreneurship.

2. Overcoming Traditional Gender Roles: Both women have broken traditional gender roles, with mobile phones acting as an essential tool in this process. In rural Sindhupalchowk, where women traditionally face restrictions on mobility and decision-making, mobile phones have provided a means for Ratna to manage her finances independently, and for Subrita to run a business that was previously outside the scope of women's involvement. These cases reflect how mobile phones allow women to participate in economic activities that were once exclusively male domains, thereby shifting gender dynamics within their families and communities.

3. Community Impact and Support: Both respondents demonstrate how mobile phones foster community connections and support. Ratna not only uses her mobile phone to stay connected with her husband but also manages her rental properties and maintains relationships with other tenants. Subrita's business model includes 20 other women who own their own phones and assist with cooking and delivery, thereby creating a support network that extends beyond individual empowerment to collective growth. Both women's stories highlight how mobile technology facilitates collaboration, with Ratna supporting other low-caste farmers and Subrita creating employment for women in her locality.

4. Coping with Geographic and Environmental Barriers: In the mountainous and isolated region of Sindhupalchowk, the respondents' use of mobile phones has proven invaluable in overcoming geographic and environmental barriers. For Ratna, mobile phones enable her to manage agricultural work and rental income despite her husband's absence. For Subrita, mobile phones have allowed her to create a business in a remote area, where communication and transportation would otherwise be challenging due to difficult terrain. Furthermore, Subrita and other women in the region use mobile phones during crises, such as the

earthquake and subsequent landslides, to maintain communication and support their families and communities.

5. **Socio-Cultural and Economic Challenges:** Both women have faced socio-cultural and economic challenges that have shaped their use of mobile phones. Ratna's reliance on mobile phones to manage finances in a patriarchal society reflects her need to assert some level of control over household matters, while Subrita's use of mobile phones to run a catering business indicates a desire to break free from traditional roles and create a new economic identity. Both women emphasize how mobile technology is not merely about communication but is integral to their economic survival and independence.

In conclusion, Ratna and Subrita's experiences reflect the transformative power of mobile phones in overcoming both structural and socio-cultural barriers. Their stories highlight how mobile technology serves as a catalyst for economic empowerment, gender equality, and community support, illustrating that, despite challenges, rural women can leverage mobile technology to improve their livelihoods and challenge traditional roles. These commonalities provide valuable insights into how mobile phones can serve as tools for empowerment in rural, gender-divided settings like Sindhupalchowk.

Questionnaire

Q#1: Usage of Mobile Phone for Economic Empowerment Questionnaire

Household Information

1. Household Number
2. Village
3. Household Population

Respondent's Information

Age -----

Education -----

Gender -----

Occupation -----

Women's Empowerment

Q#1: What do you understand by women's empowerment?

Q#2: Do you agree with women's empowerment?

1. Fully Agree
2. Partially Agree
3. Disagree
4. Fully Disagree

Q#3: Do you think that women's empowerment leads to change in society?

1. Yes
2. No

If there is a positive change, how? -----

If there is a negative change, how? -----

Q#4: Does economic empowerment sound any different than empowerment in our society?

Q#5: Do you think that education or any other factor can play an important role in women's economic empowerment?

1. If "Yes", how? -----
2. If "No", how? -----

Q#6: Do you think that NGOs or other organizations are playing any role in economic empowerment?

(i) If "Yes", which type of role? -----

(ii) If "No", how? -----

Q#7: Who decides about household activities in our society?

1. Male
2. Female

Q#8: Do women have easy access to the monthly income (which the whole family makes)?

1. Yes
2. No

Q#9: Does socio-cultural norms and religion influence your position in your family?

1. Yes
2. No

If "Yes," how? -----

If "No," how? -----

Q#10: How comfortable are you right now with being a part of a Patriarchal society?

Has it affected you?

1. Yes, in what ways?
2. No, in what ways?

Q#10: Do you think rural women needing economic empowerment is just a media hype?

You don't see the usage of it?

1. Yes, in what ways?
2. No, in what ways?

Role of Mobile Phones:

Q#11: Do you use Mobile Phone?

1. Yes
2. No

Q#12: Does Mobile Phone benefit you in any way?

1. Yes, which ways?
2. No

Q#13: Does owning a mobile phone help you feel like you are developing in any way?

1. Yes
2. No

If "Yes," how? -----

If "No," how? -----

Q#14: Do you think women have any problems, or are they suppressed in any way?

1. Yes
2. No

Q#15: How have Mobile phones been affecting your daily lives?

If "Yes," how? _____

If "No," how? _____

Q#16: Which mobile data sector are you using and why?

1. Government sector
2. Private sector

If "Government sector," why? _____

If "Private sector," why? _____

Q#17: Are you satisfied with the Government's organizations' efforts to improve the women's condition in our society?

1. Yes
2. No

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