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Digital Financial Inclusion and its Role in Reducing Urban-Rural Income Inequality

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ABSTRACT

Digital financial inclusion (DFI) has remained the central focus of this research to understand its importance in decreasing the income gap between rural and urban areas. DFI is believed to be a powerful tool that can increase affordability and accessibility of digital financial services (DFS) among rural populations. For instance, there were 51% financial institutions in 2011 offering mobile money transferring options which is expected to increase over time. Hence, a systematic review has been conducted with 11 chosen existing research articles which have helped in analyzing themes based on DFI and its influence in addressing income inequality.

KEYWORDS: *Digital financial inclusion, income inequality, digital infrastructure, digital literacy, financial disparities.*

INTRODUCTION

The concept of digital financial inclusion (DFI) refers to the process of offering digital financial services (DFS) that are equally accessible to all individuals and businesses (Karlan et al. 2016). Such digital technologies are specifically designed to be accessible to the underserved or excluded, allowing for equal services. On the other hand, the issue of income inequality is evident in urban and rural areas globally. Rural areas often lack access to DFS, including payments, savings, credit, transfers, and insurance. Moreover, these services aim to provide sustainable and affordable options for all, which can be utilized to reduce income inequality in both urban and rural areas (Agarwal, 2017). Henceforth, the research has been conducted to focus on this unique concept and assess its importance in addressing the issue of inequality in income inequality in rural and urban areas.

Background and Problem Statement

Background

DFI is increasingly identified as a useful tool to fill the differences between urban-rural income gaps. It can be seen as a persistent problem that is leveraging digital technologies as DFI aims to offer affordable, user-friendly, and accessible DFS (Meena et al. 2017). It especially targets underserved populations in rural areas, as they often face challenges due to the limitations of the traditional financial infrastructure. Statistics from Global Findex show that the accounts of mobile money providers or financial institutions were 51% in 2011 (FinDev Gateway, 2017). Such insights have also provided information on narrowing the gender gap in ownership through DFI, which was at 7% points in 2017. DFI is believed to improve global financial setbacks as it is influenced by government policies, cultural norms, and social safety nets.

Problem statement

Despite several advantages of introducing DFI in global finance, it has various disadvantages without proper usage. For instance, a report of the UN on DFI from 2016 shows that the general challenge categories of DFI include data privacy, accountability, cost, data management, coverage, enrolment, and the respective (UN.org, 2016). Besides, the report has mentioned the most common challenge of particular demographic and geographic coverage of DFI in 22 programs. Such programs also come with the challenges of limited digital services, low financial literacy in rural areas, and gender disparities that result in inadequate digital banking infrastructure as well. Hence, exploring such critical issues through the current study can highlight

associated factors and the impact of DFI in addressing income disparities as well.

Previous Literature

Assessing the significance of DFI to depict its role in urban-rural income inequalities

DFI is being introduced in both urban and rural areas globally, which is expected to reduce the income gap between these two areas. DFI offers equal access to DFS and promotes entrepreneurship, which mainly contributes to income equality (Kuku-Shittu et al. 2013). Industrial structures can be optimized by using DFI, and it improves access to such digital services for the underserved people in rural areas.

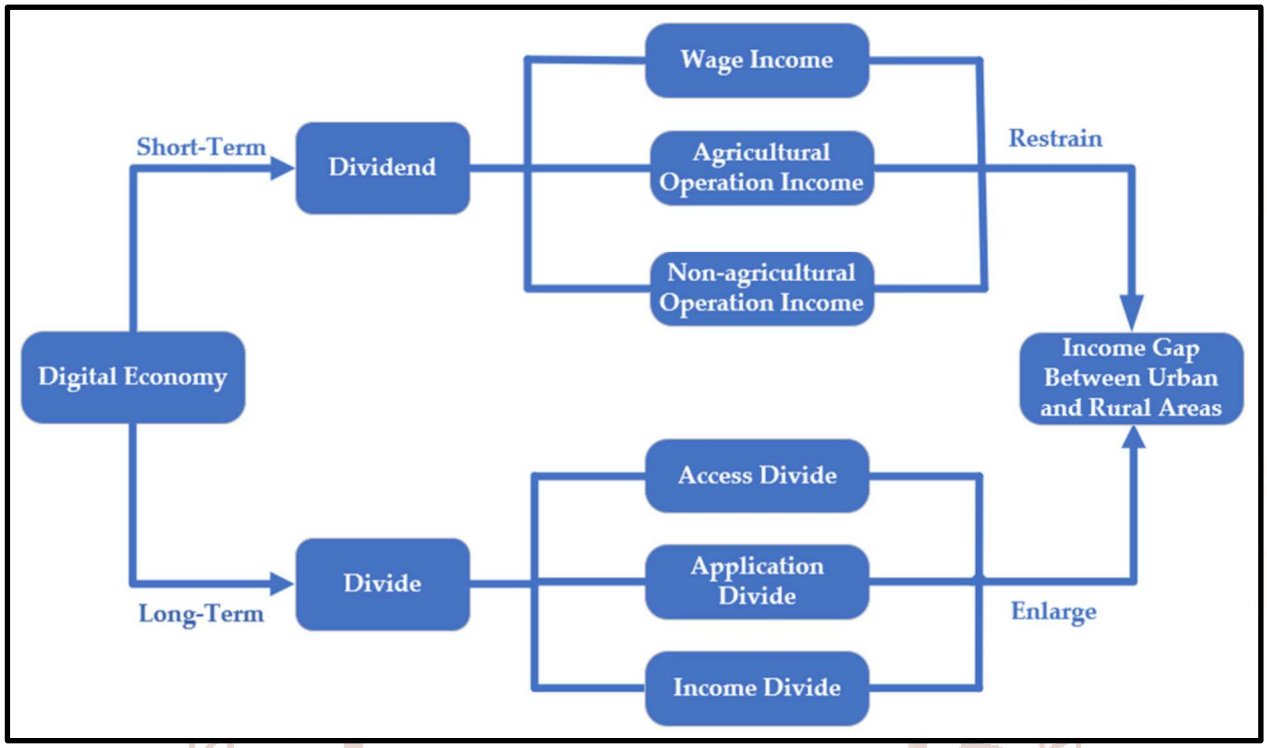

Figure 1: Development of the digital economy for the urban-rural income gap
(Source: Influenced by Moyo et al. 2015)

Figure 1 expresses the digital economy development to address the challenge of urban-rural income disparities. Moyo et al. (2015) have explained that the digital economy can be both short-term and long-term, and they have individual functions. For instance, the short-term economy is known as dividends, which leads to wage income, agricultural operation income, and non-agricultural income, particularly in rural areas, that can impose restraints on the income gap between rural and urban areas. Financial Inclusion works as a bridge between the urban and rural divide as DFI helps in expanding financial service access, like loans, insurance, and bank accounts, in rural settings (Kuku-Shittu et al. 2013).

Comprehending the aspects of DFI in lowering income inequality in urban and rural areas

Financial access is promoted equally among all people by DFI, which targets the reduction of income inequality in rural and urban places. As suggested by Benedek & Kurkó (2011), DFI roots financial literacy and economic opportunities, and lowers translation costs, which increases access to insurance and credit for even rural populations. Rural people can be allowed to establish small and medium-sized enterprises (SMEs) with economic benefits that enhance their income levels. Besides, DFI ensures that the traditionally excluded population gets access to financial services on digital platforms (Shaowei & Jinrong, 2014). Thus, they get the opportunity to have better financial management and investment. However, as argued by Moyo et al. (2015), DFI reduces transaction costs, such as through a lack of physical branch visits and cash handling. Therefore, financial services become more accessible and affordable, which includes rural populations and reduces lower-income inequality.

Strategies for adopting DFI to lessen income differences in rural and urban areas

DFI can be implemented by focusing on the strategies of expanding financial service access and improving digital literacy. Such initiatives can be implemented by promoting mobile banking and e-wallets that have

become more affordable and convenient to access financial services (David-West, 2016). It is especially effective in remote areas in spreading education among rural residents regarding the advantages of using DFS. In addition, DFS might include mobile payments, online banking services, and digital savings, along with credit options. Besides, digital skills can be promoted in rural communities for the development of DFI, including the leverage of e-wallets and mobile banking (Sääksjärvi, M., & Samiee, 2011). As a result, rural internet infrastructure can be improved with targeted training programs for such people.

Research Gap

Previous literature on this topic is inadequate, making it a less explored topic and contributing to the research background. For instance, the study conducted by Meena et al. (2017) has only focused on equal access to digital financial service platforms, yet it fails to evaluate its effects on income levels. Discussing only the most effective digital technologies for financial inclusion cannot highlight their role in urban and rural income differences. Besides, existing literature lacks exploration of the underserved population in rural areas, who are often excluded from digital finance. Thus, the current research will explore this topic and emphasize formal financial digital systems that are essential to equally accessible to decrease income differences.

Research Aim and Objectives

Aim

The research aims to critically assess the role of DFI in reducing urban-rural income inequalities.

Objectives

RO1: To clarify the importance of introducing DFI in urban and rural areas to reduce income inequality

RO2: To identify key aspects of DFI and services that help in addressing the challenge of urban-rural income inequality

RO3: To point out the best strategies of DFI to decrease income inequality levels in urban and rural areas.

Research Question

What is the impact of digital financial inclusion on decreasing income inequality between urban and rural areas?

Methodology

A systematic review method has been used to conduct the research, which has included various authentic resources in the findings. As per the view of Cocchia (2014), a systematic review helps describe a research problem from existing literary sources and finds solutions through critical exploration. For instance, this research has identified existing studies related to DFI and its impact on reducing income disparities in rural and urban areas. Several databases have been accessed, such as government websites, authentic journals, and articles from ProQuest, ScienceDirect, Wiley, and the respective along with authentic newspaper articles. These sources are known for retaining their authenticity about the topic chosen and providing relevant information for the best results (Okoli, 2015).

Keywords	AND/OR	Keywords	AND/OR	Keywords
Digital financial inclusion (DFI)	AND	Digital financial services (DFS)	OR	Digital banking systems
Income inequality	AND	Mobile payment options	AND	Economic opportunities
Urban and rural income	OR	Developing countries	AND	Empower communities
Digital technologies	AND	Income disparities	OR	Digital banking accessibility

Table 1: Boolean search results

(Source: Influenced by Cocchia, 2014)

The most effective keywords used to collect relevant online journals and articles have been mentioned in Table 1. These keywords have been combined to search in the databases using other useful filters to increase the accuracy of the collected information (Cocchia, 2014).

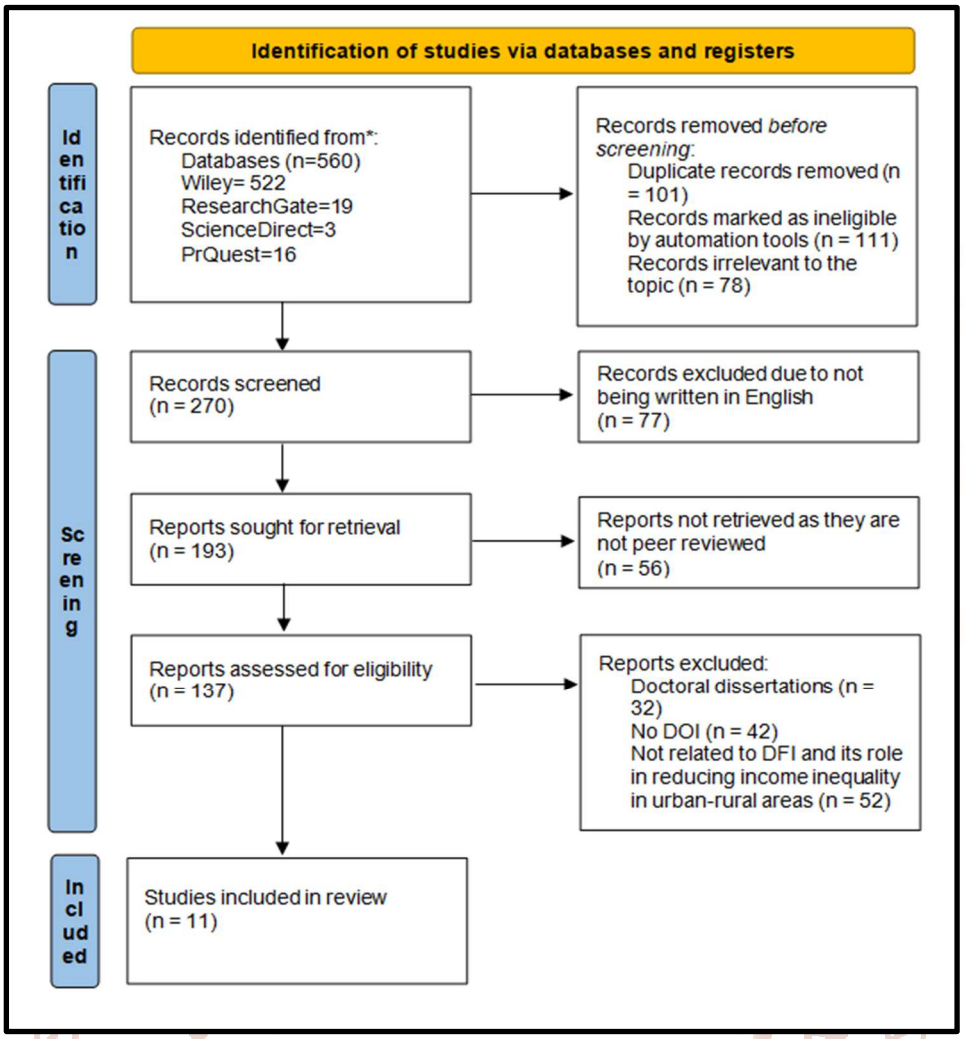

Figure 2: PRISMA diagram
(Source: Influenced by Okoli, 2015)

The inclusion of a PRISMA diagram is shown in Figure 2, which expresses how the screening method of selecting sources works in a systematic review. It has been mentioned that a total of 11 peer-reviewed articles and publications have been chosen for the analytical process. It has also mentioned the common inclusion and exclusion criteria, such as duplicate records, ineligibility in automation tools, the language used, DOI, content relevance, and the respective (Okoli, 2015). Hence, it has led to a thematic analysis to critically examine the role of DFI in bringing down the income gap between urban and rural areas.

Results

Axial coding

Authors	Codes	Themes
David-West (2016) Kigwana et al. (2017) Wukich et al. (2013)	Income gap, financial services, economic growth, and empowerment	"Theme 1: DFI increases access to digital services in finance to reduce the income gap"
Gumede et al. (2011) Weber (2017) Sendhil et al. (2017) Duarte et al. (2017)	Economic diversification, capital investment	"Theme 2: DFI involves economic diversification to reduce income differences in rural and urban areas"
Roberts et al. (2017) Ghosh (2017) Prieger (2013) Vega (2011)	Improved network quality, digital infrastructure, and affordability	"Theme 3: Better capital investment in rural digital infrastructure can result in better DFI and its impacts"

Table 2: Axial coding

Thematic analysis

Theme 1: DFI increases access to digital services in finance to reduce the income gap

DFI involves various digital services for equal access for the global population regardless of their location. Such an initiative leads to increased investment, savings, and credit access along with insurance in rural and urban settings (Kigwana et al. 2017). Rural areas, especially, can benefit by accessing these services so that economic expansion can be done in these areas. This, in turn, helps in expanding or starting new businesses by empowering individuals as well as communities. Low-income individuals or small businesses in rural areas can have affordable access to DFS, which positively influences the income gap between urban and rural areas globally. Hence, rural areas can increase agricultural productivity and have access to broader markets.

Rural places are limited in internet access and digital infrastructure, which can be challenging to promote DFI, addressing income gaps. It can be coupled with the issues of low internet penetration, inadequate technological awareness, and unreliable electricity supply that can hinder the increasing adoption of DFS (Wukich et al. 2013). DFI enables individuals to access DFS in rural areas to obtain financial opportunities and increase income equality. Hence, digital literacy is fundamental to be promoted in rural areas to increase their digital skills to effectively use DFS and encourage their economic stability. Their affordability of credit can be significantly increased, which remains a constant concern for the segment of the asset-poor population.

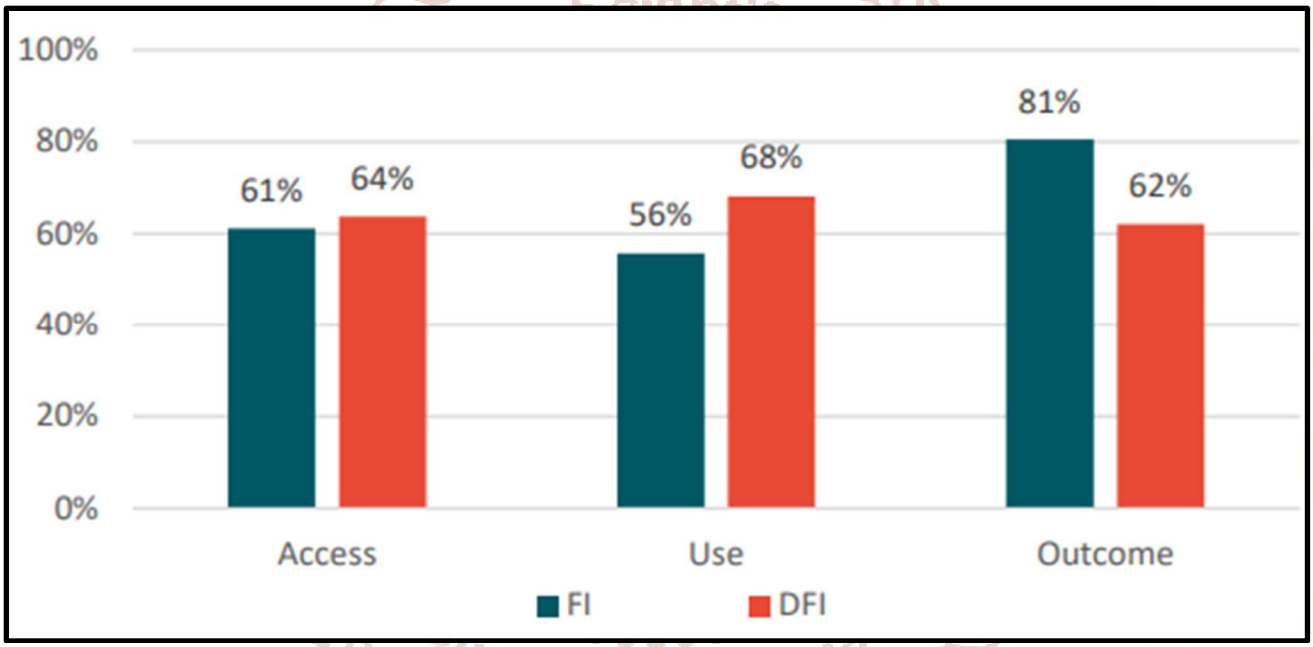

Figure 3: Focus on access, use, and outcome of DFI
(Source: Influenced by Gammage et al. 2017)

Figure 3 explores the survey results regarding the access, use, and outcome of implementing DFI. For insurance, 56% of financial inclusion (FI), along with 68% DFI, has been used to emphasize its importance in decreasing the income gap (Gammage et al. 2017). The increasing use of DFI can increase digital literacy among the rural population so that their benefits can be promoted.

Theme 2: DFI involves economic diversification to reduce income differences in rural and urban areas

Economic diversification can be promoted through DFI, as DFI focuses on digital technologies and expanding DFS. As stated by Sendhil et al. (2017), DFI can be used as a powerful driver of economic diversification, especially in rural settings, as it can reduce income inequality. Non-farm economic activities, such as access to capital for SMEs, can be increased in rural and suburban areas, as it is heavily dependent on agricultural productivity. SMEs can have better access to credit and microloans, which are highly helpful for rural entrepreneurs. In contrast, Weber (2017) has explained that digital banking systems and payment options reduce transaction costs for conducting business. Consequently, rural businesses can improve their payment facilities, pay suppliers, and manage finances effectively.

DFI in developing countries supports agricultural businesses for modernization and adds value to the businesses. Diversification can be seen beyond agriculture as DFI supports diversification within this business

sector (Gumede et al. 2011). As the rural populations are mainly dependent on agriculture, diversification in this business can provide easy access to credit and investment in improved seeds, machinery, irrigation systems, and the respective. It directly supports rural economic development so that the income gap from the urban areas can be gradually improved. Contrarily, Weber (2017) has contradicted by stating that diversification in rural settings can be done by DFI by focusing on entrepreneurial spirit. Rural individuals can be encouraged to improve their skills in various aspects to formalize their income with better access to finance.

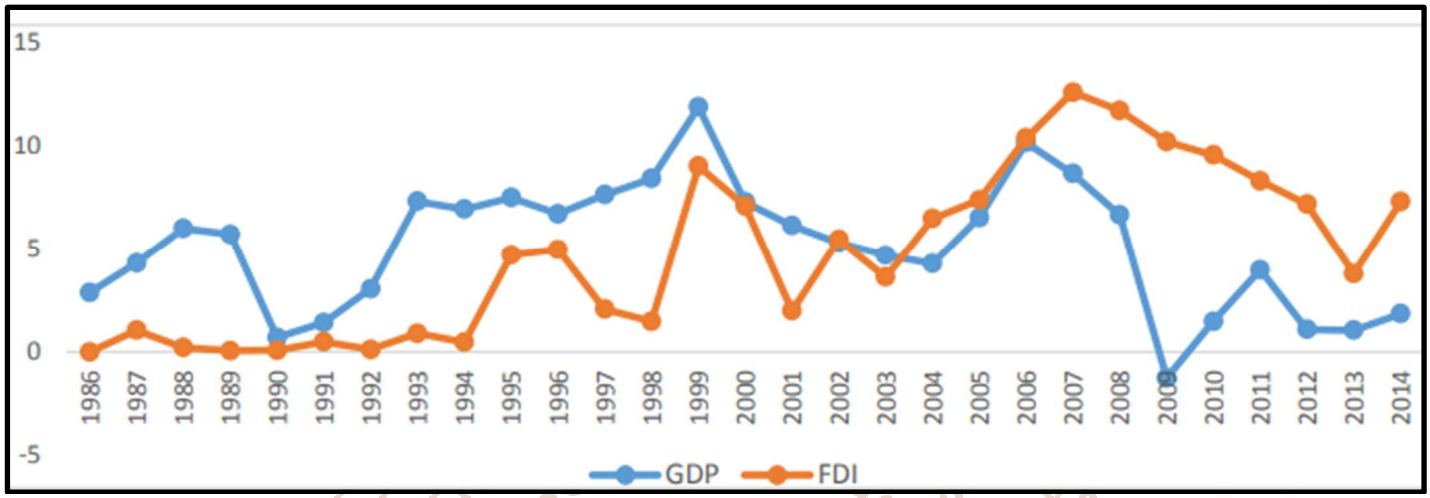

Figure 4: The relationship between foreign direct investment and GDP
(Source: Influenced by Duarte et al. 2017)

Figure 4 establishes a connection between FDI and GDP, a crucial aspect of a country's economy. The findings of Duarte et al. (2017) have demonstrated that the economy of Cabo Verde in 2014 increased by 1.4% which was recovered by the FDI. It has significantly increased due to the boosted household consumption by the migrants during this stage. The interconnection between FDI and GDP is complex, yet FDI involves increased capital investment, improved productivity, and technology transfer to encourage GDP. Thus, the introduction of DFI in this context can help in increasing FDI to improve the GDP of rural areas.

Theme 3: Better capital investment in rural digital infrastructure can result in better DFI and its impacts
It is a fundamental truth that capital investment in the digital infrastructure of rural areas for DFI and the digital transformation in such areas. As highlighted by Prieger (2013), digital infrastructure must be affordable, robust, and equally accessible to promote a promising DFI. In this context, it can be suggested that DFI in rural areas remains unfulfilled due to the foundational usage of connectivity. Moreover, investment in technologies can increase technological connectivity, whether through fibre optics, mobile data, or satellite. Contrastingly, Ghosh (2017) has argued by stating that internet affordability in rural areas can be challenging to promote DFI. Hence, DFI must emphasize making financial services affordable for the rural population to observe a better impact.

Rural areas can focus on improving network quality in rural areas with the introduction of DFI, allowing a smoother experience for the users. It allows the rural population to have complex transactions and seamless customer support for the rich financial application (Roberts et al. 2017). Besides, further investment can be made in DFI platforms through a focus on localized data centres along with cloud computing infrastructure for further development. Digital literacy can be boosted with the right application of DFI, as it depends on the basic usage of smartphones, communication, and entertainment.

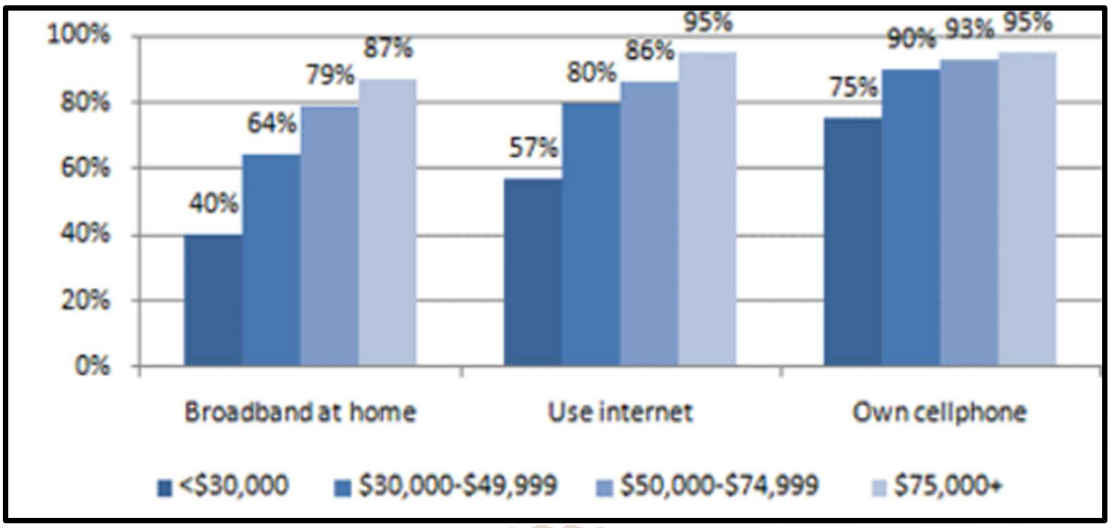

Figure 5: Broadband access in the global rural population in 2011
(Source: Influenced by Vega, 2011)

Figure 5 explores the level of broadband connection access in the worldwide rural populations in 2011. It has been projected that broadband was accessed by only 40% of the rural population with an income of <$30,000 (Vega, 2011). It has depicted a lack of internet accessibility, which is a primary factor of DFI. Therefore, capital investment in this area can be highly beneficial to develop the rural infrastructure so that DFI can work in a better way.

Discussion

The critical analysis of DFI and its importance in urban-rural income disparities has revealed that the bridge of financial service access can be considered a major benefit. According to Anand & Chhikara (2013), DFI can empower small businesses and individuals, particularly in rural areas. These concepts are mainly applicable in developing countries, making a substantial stride in DFI through initiatives such as mobile banking and money transfers. The role of DFI is mostly prominent in financial services as it helps in overcoming geographic barriers through DFS. It allows rural people to access online payments, banking facilities, insurance, and savings, which can empower rural people (Radcliffe & Voorhies, 2012). However, internet-based platforms for mobile banking and digital wallets are scarce in rural areas, which mainly contribute to the income gap.

On another note, the findings of this study have suggested that DFI can be seen as a powerful tool for reducing income inequality in urban and rural locations. DFI extends the most common and necessary financial services to the underserved population to foster economic opportunities (Jenik et al. 2017). In this way, it empowers communities and individuals in such areas and addresses the challenge of the existing financial infrastructure with digital infrastructure. Digital literacy is also increasing in rural areas, which is providing them with economic opportunities, such as mobile money transfer, which is especially beneficial for small businesses. Yet the aspects of digital financial security are a key concern that is critical to be realized for the transformative potential.

Conclusion

A systematic review has been conducted to amplify the significance of DFI in global DFS that promotes equal services and income equality. The concept of DFI is believed to improve digital services in the financial sector, even in rural areas, so that their economic stability can be improved. However, the research has emphasized improving digital infrastructure to enhance data security and privacy, as mobile banking and such features involve a massive amount of public data. The systematic review has also depicted that DFI can make individual or rural communities achieve basic digital services through digital literacy, which is crucial for its further adoption.

Future Scope and Recommendations

Future Scope

The current research has significant future scope as it has addressed an interesting area of discussion, which is less investigated. The study has established a link between DFI and income inequality in both urban and rural places (Jenik et al. 2017). It has primarily included global information that can contribute to future research on similar backgrounds so that specific geographic areas can be discussed based on

such valuable information. Therefore, more specific knowledge can be obtained from future studies by using information from this study as a foundational work.

Recommendations

After the critical exploration of the research topic, it can be suggested that the practices of mobile money accounts can be helpful in promoting DFI in rural areas. It will not only improve the digital financial infrastructure of developing countries and rural areas but also recognize and address digital divides to bridge the income gap (Demirgüç-Kunt et al. 2014). This method will assist in fostering economic empowerment to promote equitable growth.

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