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The Effect of Telecommunication Services in Enhancing Economic Development in Banadir Region, Mogadishu, Somalia

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A B S T R A C T S

This study investigates the impact of telecommunication services provided by Hormuud Telecom on economic development in the Banadir region of Mogadishu, Somalia. Employing a quantitative approach, this study examines how broadband Internet penetration, network coverage, and Internet usage influence key economic indicators, such as GDP growth, employment, and financial inclusion. Primary data were collected through closed-ended questionnaires administered to a sample of 100 participants, including Hormuud Telecom department leaders, employees, and customers. Secondary data on company and economic metrics were also utilized. The collected data were analyzed using descriptive Statistics and analysis performed in SPSS to explore the relationship between telecommunications development and economic growth. The findings reveal a strong positive perception of the impact of Hormuud Telecom's services on macroeconomic development, particularly in terms of rising GDP per capita and the proliferation of mobile money services such as EVC Plus. However, the study also uncovers a lack of consensus regarding the micro-economic benefits, with polarized views on the impact on local business growth, unemployment rates, and poverty reduction issues. Furthermore, the results highlight a significant gap between network coverage expansion and the quality and reliability of Internet services. The study concludes that while telecommunications infrastructure is a crucial enabler of economic development in the Banadir region, its full potential is moderated by factors such as service quality, digital literacy, and broader socioeconomic challenges. The findings offer valuable insights for policymakers, regulators, and industry stakeholders in Somalia, emphasizing the need for more inclusive and sustainable strategies to ensure that the benefits of digital growth are widely shared.

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Keywords / Kata Kunci — ***Telecommunication services; Economic development; Banadir region; Mogadishu; Somalia; Hormuud Telecom; Internet penetration***

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1. INTRODUCTION

Telecommunications involve the electronic transfer of information over long distances. The simplest form of communication occurs between two points. However, data are typically shared among several transmitting and receiving points, forming what is known as a communication system. The Internet is a prime example of such a system. Pinchoff et al. (2021) noted that urban areas have a 66% higher unemployment rate than rural areas.

Economic stagnation is a major barrier to social and economic development. Socioeconomic development involves human and community advancement, assessed through factors such as income, life expectancy, literacy, and employment levels. The industrial sector, which contributes 10% to the GDP, is primarily involved in processing agricultural goods; however, many facilities have shut down due to instability. The lack of spare parts and theft incidents have severely affected the small industrial sector, which is mainly concentrated on food production. Furthermore, markets are flooded with smuggled goods (Economic & Studies, 2022).

There is a lack of reliable, up-to-date, and precise data on unemployment rates and other key economic indicators. It also includes changes in less tangible areas such as civil society participation, individual freedom of association, and freedom from fear of physical harm (Yusuf et al., 2020). As one of the world's least developed nations with scarce natural resources, Somalia's economy has been heavily affected by civil unrest. Somalia's economic growth has been inconsistent. Agriculture is the leading industry in the area, accounting for approximately 60% of export earnings and 40% of GDP through animal products. A large segment of the population consists of herders or semi-nomadic people who depend on livestock for their livelihoods. The main exports are livestock and bananas, while the domestic market offers sugar, rye, maize, and fish products. In this context, socioeconomic development is defined as an improvement in the average standard of living across a country, resulting from a shift from a simple, low-income economy to a complex, high-income economy. Somalia remains in a vulnerable state due to ongoing civil wars and harsh weather conditions that have left millions homeless (Ali et al., 2020). Most conventional financial systems have disappeared. The efforts made by a nation to improve the financial, political, and social well-being of its citizens fall within this scope of research. HORMUUD Telecom was founded in 2002 to support the nation’s telecommunications sector, including call, fixed line, and other internet services. Mohammed Aden, the CEO of Hormuud, asserts that the product will greatly improve payment systems nationwide. Many people, including Hormuud Telecom staff, have reaped significant benefits from these initiatives and enjoy greater security when starting families. By examining how enhanced infrastructure boosts productivity, job creation, and market access, this study explores the role of telecommunication services in economic development. This underscores the significance of privatizing the telecom sector in developing nations to attract investment, boost productivity, and broaden service offerings.

Private sector involvement has outpaced public monopolies and has been vital for rapid network expansion and technological advancement. The specific goals of this study are to evaluate Hormuud Telecom's influence on Somalia's telecom industry and economy: (1) to assess the impact of broadband Internet penetration on economic development in the Banadir region, Mogadishu, Somalia; and (2) to evaluate its effects on network coverage in fostering economic development in the Banadir region, Mogadishu, Somalia. This study offers a detailed analysis of Hormuud's simultaneous contribution to Somalia's economic growth and telecommunications progress. The study's conclusions are advantageous to the leadership of Mogadishu and other leaders in crafting telecom strategies. (3) To assess its effects on Internet usage in promoting economic development in the Banadir region of Mogadishu, Somalia. This study provides a comprehensive evaluation of Hormuud's concurrent contributions to Somalia's economic growth and telecommunications advancement. The findings aim to aid policymakers in using telecommunications as a driver of socioeconomic development

2. LITERATURE REVIEW

2.1. Theory of literature review

1. Network Effect Theory and Mobile Money Ecosystem

Network Effect Theory provides crucial insights into how mobile money ecosystems contribute to economic development in the Banadir region. According to this theory, the value of mobile financial services, such as EVC Plus and Zaad, grows exponentially as more users adopt the platform (Garcia et al., 2024). In Mogadishu, where 95% of financial transactions occur through mobile money (UNDP, 2021), the expanding user base has created significant network effects that drive this economic growth. As mobile network coverage (IV2) expands, more businesses and consumers join the digital payment ecosystem, attracting complementary services such as digital credit, e-commerce platforms, and mobile insurance products (UNCTAD, 2021). The Central Bank of Somalia (2022) has documented this trend, showing that mobile money transaction volumes reached $2.7 billion annually once adoption exceeded the critical threshold in urban areas. However, these network effects are not evenly distributed geographically; while Mogadishu benefits from strong network effects due to dense 4G coverage and high adoption rates, rural peripheral areas with poor connectivity do not experience these economic multipliers (GSMA 2023). Ultimately, the theory highlights that the developmental impact of mobile money depends not only on initial infrastructure investments, but also on achieving sufficient user density to trigger self-reinforcing network effects that can transform entire economies.

2. Capability Approach to Digital Development

The Capability Approach offers a useful framework for examining how digital development influences economic growth in the Banadir region by focusing on individuals' real opportunities rather than just their access

to technology. Originating from Amartya Sen (1999), this approach highlights that broadband Internet (IV1) and mobile network coverage (IV2) lead to significant economic development (DV) only when users have the necessary conversion factors to effectively use these technologies. In Mogadishu, these conversion factors include personal digital literacy levels (Somali ICT Association, 2023), social trust in mobile money platforms within clan networks (Ahmed & Yusuf, 2022), and environmental support such as reliable electricity (Abdi, 2021). Despite a 75% mobile money penetration rate indicating substantial technological access (Central Bank of Somalia, 2023), the Capability Approach clarifies why only 20% of rural businesses fully benefit, as they might lack the skills, trust, or stable power needed to turn access into economic freedom. This theoretical perspective helps explain the differences in development outcomes in Banadir, showing how the same digital infrastructure can produce different results based on users' ability to use it to improve business operations, find employment in growing fintech sectors (UNDP, 2023), or reduce vulnerability to cash-based crimes. Ultimately, the Capability Approach suggests that Somalia's digital development policies must go beyond infrastructure deployment to address these crucial conversion factors if investments in broadband and networks are to achieve their full potential for inclusive economic transformation.

2.2. Discussion of variables

1. Broadband Internet Penetration and Economic Development

In the Banadir region, particularly in Mogadishu, the spread of broadband Internet has become a crucial element in fostering economic growth. The digital economy is reshaping business operations, public service delivery, and financial inclusion. The development of broadband infrastructure opens access to international markets, boosts productivity, and encourages innovation across multiple sectors (World Bank, 2020). In Somalia, where conventional banking systems are not well established, mobile money services powered by broadband, such as EVC Plus and Zaad, have transformed financial transactions. This transformation allows small and medium enterprises (SMEs) to engage in the formal economy (GSMA 2021). In Mogadishu, broadband Internet access plays a crucial role in enabling businesses to leverage digital tools for marketing, sales, and supply chain management. A study by the Somali ICT Association (2022) revealed that small and medium-sized enterprises (SMEs) with dependable Internet connections saw a 30% boost in revenue growth compared to those without online access. This increase is largely due to the broader customer base reached through e-commerce platforms such as Somali Mall and Hormuud E-Shop. Furthermore, broadband connectivity facilitates instant communication with international partners, which helps lower transaction costs and boosts competitiveness in export-driven industries, such as livestock and agriculture (UNDP, 2021). The Somali economy heavily relies on mobile money services, largely because of the absence of a robust banking sector. The presence of broadband Internet supports mobile financial services, allowing both businesses and individuals to conduct secure transactions. According to the World Bank (2022), 72% of Somali adults use mobile money, with the Banadir region showing the highest levels of adoption. This digital financial system has successfully decreased dependence on cash, reduced theft risks, and improved savings rates among low-income households (Hoque 2020).

2. Network Coverage and Economic Development

In Mogadishu, mobile network coverage plays a crucial role in economic growth, as 95% of financial transactions occur through mobile money because of the scarcity of banking facilities (UNDP, 2021). The improvement of 3G/4G networks has promoted financial inclusion, boosted business productivity, and created more job opportunities, although differences between urban and rural regions remain. The growth of mobile networks has enabled platforms such as EVC Plus (Hormuud) and Zaad (Telesom) to lead Somalia's financial industry. A report from the Central Bank of Somalia (2022) indicates that mobile money transactions have reached an annual total of $2.7 billion, with Banadir contributing 65% of this volume.

3. Internet usage and Economic Development

Internet use is a potent economic development catalyst that propels growth via a variety of avenues, such as increased productivity, innovation, and market expansion. The internet promotes entrepreneurship and boosts productivity in a number of economic sectors by making data, e-commerce, and electronic banking services more accessible (World Bank, 2021). Increased internet usage is linked to notable GDP development in poor nations because digital technologies lower transaction costs, enhance the quality of healthcare and education, and generate new job opportunities (ITU, 2022). Additionally, internet connectivity facilitates local economies' integration into international markets by enabling companies, particularly small and medium-sized businesses, to engage in global supply chains and reach a wider audience (UNCTAD, 2023).

2.3. Concept of Telecommunication Services

The contemporary perception of telecommunication services has advanced from the simple transmission of voice and data to complex digital functionalities. This shift is largely fueled by the extensive implementation of high-speed connectivity technologies, such as 5G, and the move towards software-defined infrastructure. Modern

services are characterized by the provision of integrated solutions that encompass high-speed Internet, cloud computing platforms, IoT management, and unified communications. These are enabled by sophisticated intelligent networks that prioritize security, low latency, and significant scalability (ITU, 2022). This transformation is underpinned by major technological developments, such as network virtualization (NFV), edge computing, and the rollout of 5G standalone networks. Together, these innovations facilitate new service models, such as network slicing, which permits operators to create customized virtual networks with specific performance characteristics for various industrial and consumer applications (GSMA, 2023). Consequently, the industry's focus has expanded from simple connectivity to offering value-added platforms that aid digital transformation for businesses and smart cities, thereby positioning telecommunications services as an essential, integrated utility within the digital economy (McKinsey & Company, 2023).

2.4. Research Gap

The study examining the role of telecommunication services in the economic development of the Banadir region in Mogadishu, Somalia, highlights several significant areas that require further research. While the research acknowledges the positive impact of telecommunications on economic growth, it falls short of thoroughly exploring the qualitative aspects of service delivery, such as network reliability, Internet speed, and service interruptions. These elements are essential for evaluating the practical effectiveness and impact of telecommunication services on businesses and everyday activities; however, they were not sufficiently addressed in the current study.Second, the research heavily depends on self-reported information from a small group of Hormuud Telecom staff and clients, which could lead to bias and limit the applicability of the results. The lack of corroboration with objective economic indicators, such as official GDP data, employment figures, or independent assessments of financial inclusion, weakens the credibility of the conclusions regarding the impact of telecommunications on economic growth.

Third, the study falls short of adequately exploring the digital divide in the Banadir region, especially between urban and rural areas. The study also overlooks the negative externalities that may arise from the swift growth of telecommunications, such as increased cybersecurity threats, concerns over data privacy, and the socioeconomic impacts of a single provider, such as Hormuud, dominating the market.

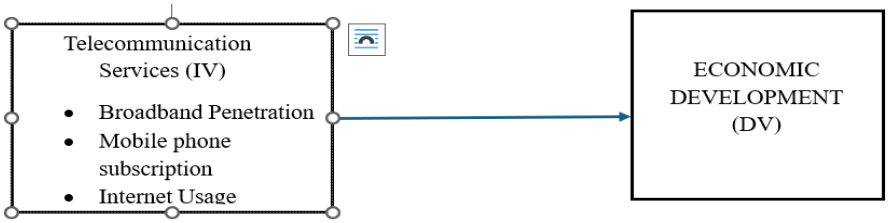
2.5. Economic Development

Economic progress in Banadir is evaluated using metrics such as GDP growth, employment levels, and financial inclusion. Recent statistics indicate that the telecommunications industry in Somalia accounts for 5.4% of the GDP, with mobile money usage reaching 75% in Mogadishu (Central Bank of Somalia, 2023). The digital job market, especially in logistics and fintech, has seen a 15% annual increase, creating job opportunities for the youth (UNDP, 2023). However, despite these improvements, inequalities persist, as only 20% of rural enterprises utilize digital tools due to inadequate infrastructure (Somalian ICT Association, 2023).

Relationship Between Independent Variables (IVs) and Dependent Variable (DV). Recent literature extensively covers the link between broadband Internet penetration (IV1) and network coverage (IV2) with economic development (DV) in the Banadir region. Research shows that improved broadband access significantly boosts business efficiency, financial inclusion, and GDP growth by enabling digital transactions, such as EVC Plus, e-commerce, and telecommuting (World Bank, 2023). Likewise, increased 3G/4G coverage (IV2) enhances mobile money usage, reduces the risks associated with cash transactions, and fosters employment in ride-hailing and delivery sectors (GSMA, 2023). Nonetheless, this relationship faces challenges, such as high Internet costs, power shortages, and security issues, which particularly affect rural enterprises (ITU, 2023). Empirical data indicate that regions with both broadband and stable networks recover economically 30% faster than those lacking digital access (UNDP, 2023).

2.6. Conceptual Framework

This section is crucial to our research as it establishes the study's framework and organization. To effectively define the concepts, it is essential to clearly outline the focus of the research. This is illustrated in a diagram, elaborated upon, and the connection between the independent (IV) and dependent (DV) variables is identified.



Source: Conceptual Framework Developed by Researchers

FIG 1. the effect of telecommunication services in enhancing economic development in Banadir region Mogadishu Somalia

3. MATERIALS AND METHODS

This section outlines the research methodology used in this study. Quantitative data is employed using closed-ended questionnaires distributed to a sample of 100 participants. The sample consisted of department leaders, employees, and customers of Hormuud Telecom, selected using simple random sampling methods to capture insights from both knowledgeable insiders and the general user population.This research utilizes primary data collection via questionnaires, focusing on topics related to employment and welfare, along with secondary data concerning broader company and economic metrics, such as tele-density and GDP. The collected quantitative data were then examined using descriptive statistics, which are displayed in frequency tables and charts, as well as inferential statistics, specifically Pearson correlation analysis. This analysis was performed using SPSS software to explore the connection between telecommunications development and economic growth.In summary, the methodology was carefully designed to systematically gather and examine data relevant to the research goals. By combining field research through questionnaires with library research for secondary data, this study aims to provide a thorough analysis of how telecommunications services affect economic development in the Banadir region. The next section clarifies the findings obtained from this methodological approach.To bolster the strength of this study, various methodological factors were considered. This study aimed to achieve validity and reliability by conducting pilot tests on the instruments and employing data source triangulation, ensuring that the findings accurately reflected the intended constructs and remained consistent over time. Ethical considerations were of utmost importance; all participants provided informed consent, anonymity and confidentiality were assured, and the study design was approved by an institutional review board to minimize potential harm. Nonetheless, this study has some limitations. The reliance on a convenience sample from a specific geographical area may limit the applicability of the findings to broader populations, indicating a need for further studies involving more diverse groups to validate these results.

4. FINDING AND DISCUSSION

4.1. Demographic characteristics of the respondents

This section provides a summary of the participants involved in this study, highlighting their sociodemographic characteristics. The objective of this study was to examine the profiles of people living in Banadir, Mogadishu, and Somalia.

The demographic details of the participants provided crucial context for understanding the study's outcomes. As shown in Table 1, the sample was mainly composed of males (65%), with a large portion aged between 26 and 30 years (44%) and holding a diploma-level qualification (49%). Furthermore, a notable portion of respondents (54%) indicated having 1-2 years of experience in their respective fields. This demographic profile suggests that the data largely represent the views of young, educated, and moderately experienced males in the Banadir region. Although this may influence the generalizability of the findings, it accurately reflects a significant demographic in the emerging digital economy in Mogadishu.

TABLE 1. Profile of the respondents

Demographics	Frequency	Percent
Gender	Male	65.0%
	Female	35.0%
Marital status	Single	58.0%
	Married	42.0%
Age in yrs	20-25	22.0%
	26-30	44.0%
	Above 30	34.0%
Education level	Secondary	21.0%
	Diploma	49.0%
	Bachelor degree	25.0%
	Master	4.0%
	Other	1.0%
Experience of Respondents	1-2 years	54.%
	3 years-Above	46.0%

Source: Developed by the researchers (2025)

4.2. Descriptive analysis of variables

1. Objective one: Broadband Penetration

This study explored how telecommunications influence economic growth in Banadir, Mogadishu, and Somalia. The table displays five telecommunications-related items organized by levels of agreement: Agree, Strongly Agree, Neutral, Disagree, or Strongly Disagree, along with their respective frequencies, means, and standard deviations.

2. Broadband Internet Penetration and Economic Development

The examination of the independent variables provides detailed insights into the influence of Hormuud Telecom. Regarding broadband penetration (IV1), Table 4.2.2 shows a strong agreement (44% Strongly Agree) that the company's impact has been largely restricted to Somalia, highlighting its primary focus on the domestic market rather than on international expansion. However, views on its origins and service emphasis were more

varied, with the most frequent responses being neutral (38% and 34%, respectively), suggesting some public uncertainty or lack of awareness about the company's background. In terms of network coverage (IV2), Table 4.2.3 reflects a positive acknowledgment of growth, with 56% (Agree + Strongly Agree) recognizing an increase in mobile penetration. Nonetheless, the perception of enhanced Internet access was less enthusiastic; while 35% agreed, a notable 30% (Disagree + Strongly Disagree) disagreed, pointing to considerable dissatisfaction with the quality or reliability of Internet services despite the network's expansion

TABLE 2. Broadband Penetration and Economic Development

IV1		A	SA	N	D	SD	Mean	Std
1.1. Hormud Teleco originated as a government-owned company before transitioning to private ownership.	F	24	30	38	2	6	2.68	1.12
	%	24 %	30 %	38 %	2 %	6 %		
1.2. Hormud Telecom	F	30	21	34	9	6	2.83	1.21
	%	30 %	21 %	34 %	9 %	6 %		
1.3 Hormud Telecom's contributions	F	7	44	22	23	4	2.75	1.45
	%	7 %	44 %	22 %	23 %	4 %		

Source: Researchers (2025)

TABLE 3. Network Coverage and Economic Development

IV2		A	SA	N	D	SD	Mean	Std
1.4. Increase in mobile penetration rates since operations began	F	27	29	18	23	3	2.74	1.23
	%	27 %	29 %	18 %	23 %	3 %		
1.5. Improved internet access in served areas	F	35	8	27	23	7	3.06	1.14
	%	35 %	8%	27 %	23 %	7 %		
1.6. Expanded network coverage in underserved areas	F	29	18	29	20	4	2.86	1.18
	%	29 %	18 %	29 %	20 %	4 %		

Source: Researchers (2025)

3. *Network Coverage and Economic Development*

The analysis of the relationship between Internet usage (IV3) and economic development (DV) presents the most noteworthy results, as shown in Table 4.2.4. A significant portion (72% Agree + Strongly Agree) noted a notable rise in GDP per capita in areas served by Hormuud, directly linking the growth of telecommunications to a crucial economic metric. Conversely, the effects on local businesses and unemployment rates were highly divergent. For instance, while 39% agreed that employment opportunities had a positive impact on unemployment, nearly the same percentage, 37%, strongly disagreed. Similarly, views on the expansion of local businesses were sharply split, with 31% remaining neutral and 28% strongly disagreeing with the statement. This stark division indicates that the economic advantages of improved telecom services are not consistently felt throughout the Banadir Region. The benefits, especially in macroeconomic indicators such as GDP, might be offset by persistent issues in job creation and support for entrepreneurship at the micro-level, underscoring the complex and uneven nature of economic development driven by telecommunications.

4. *Internet Usage and Economic Development*

TABLE 4. internet usage and Economic Development

IV3		A	SA	N	D	SD	Mean	Std
1.7. Improved connectivity led to economic growth in local businesses	F	14	16	31	11	28		
	%	14 %	16 %	31 %	11 %	28 %		
1.8 Positive impact on regional unemployment rates	F	39	15	9	10	27	2.99	1.38
	%	39 %	15 %	9 %	10 %	27 %		
1.9 Increased GDP per capita in-service areas	F	50	22	18	4	6	2.42	1.12
	%	50 %	22 %	18 %	4 %	6 %		

Source: Researchers (2025)

The examination of variables related to Internet usage (IV3) revealed a multifaceted and intricate connection with economic progress in the Banadir region. The results indicate that the perceived effects differ considerably based on the economic metric being evaluated. For instance, a significant portion of participants (72% combining 'Agree' and 'Strongly Agree') observed a marked rise in GDP per capita in areas where Hormuud Telecom had broadened its services (Item 1.9). This agreement is further supported by the lowest mean score of 2.42 (leaning towards the "Agree" side of the scale) and the smallest standard deviation (1.12), reflecting strong consensus and uniformity among respondents regarding this macroeconomic advantage.

This indicates a distinct positive link between improved Internet connectivity and the region’s overall economic output, likely fueled by increased business activity, digital financial transactions, and enhanced market efficiency.

5. Discussions of *findings*

The results of this study shed light on the intricate and multifaceted connection between Hormuud Telecom's expansion of telecommunication services and economic growth in the Banadir region. The discussion interprets these findings through the lens of the established theoretical frameworks. A significant majority (72% agreement) on the rise in GDP per capita in areas with service aligns with the Network Effect Theory (Katz & Shapiro, 2023) and the empirical data from the Central Bank of Somalia (2022). As mobile money adoption crossed a

critical threshold, it triggered a positive cycle: the increase in users boosted the platform's value, thereby encouraging wider digital economic activity and enhancing overall economic output. This is demonstrated by the $2.7 billion annual volume of mobile money transaction. However, the sharply divided opinions on the impact on local business growth and unemployment (e.g., 39% agree vs. 37% strongly disagree on unemployment) highlight the limitations of the Capability Approach (Sen, 1999). It seems that although the digital infrastructure (IV1, IV2) is established, substantial portions of the population and business community lack the essential "conversion factors ‘such as advanced digital literacy, access to capital beyond basic transactions, or entrepreneurial training to fully utilize these tools for business growth and job creation.The advantages are not being shared fairly, leading to a split between overall economic growth and stagnation at the individual level for many people. The data show that 56% of participants acknowledge an increase in mobile network coverage (IV2), indicating a rise in mobile usage. This growth is a fundamental step towards basic financial inclusion. However, only 35% agreed with the notion of "improved internet access," while 30% disagreed. This discrepancy highlights that respondents distinguish between the mere presence of a signal and the quality of service, including dependability, speed, and cost. This observation directly addresses the significant research gap noted in the literature review. This suggests that for economic progress to be fully achieved, policies and corporate strategies must shift from focusing solely on geographic coverage to improving the quality and reliability of that coverage, ensuring that it meets the demands of contemporary businesses and applications. The strong agreement (44% Strongly Agree) that Hormuud's impact is limited to the domestic market emphasizes its role as a vital national stabilizer and builder rather than a competitor on the international stage. Investments targeted at Somalia have played a vital role in its post-conflict recovery. However, they also point to a potential growth area: linking the Somali digital economy to global markets. Improved, high-quality broadband (IV1) could be key in shifting from local transactions to allowing Somali businesses to compete internationally in industries such as livestock, agriculture, and services. The varied and often neutral reactions to dependent variables such as infrastructure investment (39% neutral), poverty rate trends (42% agree vs. 22% strongly disagree), and per capita income (29% neutral) highlight the considerable difficulty in distinguishing the impact of telecommunications from other influential factors in fragile states like Somalia. As mentioned in the limitations, elements such as political instability, climate shocks, and international aid flows have a significant impact on these indicators. Although telecommunications are a strong enabler, they cannot independently resolve all structural economic issues. This conclusion supports the study's methodological caution against claiming direct causation and emphasizes the need for a more detailed, long-term analysis.

5. CONCLUSION

In conclusion, this study demonstrates that telecommunication services, particularly those provided by Hormuud Telecom, have played a significant role in enhancing economic development in the Banadir region of Mogadishu, Somalia. The expansion of broadband Internet penetration, mobile network coverage, and increased Internet usage has contributed to macroeconomic growth, as evidenced by the perceived rise in GDP per capita and the proliferation of mobile money services such as EVC Plus. These advancements have facilitated financial inclusion, improved business operations, and connected local enterprises to the global market. However, the benefits have not been uniformly distributed, with microeconomic indicators such as local business growth and unemployment rates showing polarized results. This suggests that while telecommunications infrastructure is a critical enabler, its full potential is moderated by factors such as service quality, digital literacy, and broader socioeconomic challenges. This study underscores the transformative impact of telecommunications on Somalia’s economy but also highlights the need for more inclusive and sustainable strategies to ensure that growth translates into tangible improvements across all segments of society.

5.1. Recommendation

Drawing from the results of this study, several suggestions are proposed to enhance the beneficial effects of telecommunication services on economic growth in the Banadir region. First, it is crucial for policymakers and telecommunication companies to focus on improving the quality and reliability of Internet services, rather than just increasing geographic reach, to ensure that both businesses and individuals can fully utilize digital tools. Second, programs designed to boost digital literacy and skills training should be introduced to close the capability gap and allow more users to convert technological access into economic opportunities. Third, efforts should be made to tackle the digital divide between urban and rural areas by investing in infrastructure and affordable service plans. Additionally, promoting a competitive telecommunications market could reduce the risks of market dominance and stimulate innovation and better service delivery. Finally, future research should employ longitudinal methods and include more varied and objective data sources to gain a deeper understanding of the long-term and causal links between telecommunication expansion and economic development in fragile settings such as Somalia.

5.2. Contribution of the Study

1. Empirical Contribution

The empirical significance of this study is highlighted through its practical application and contextual analysis of established economic theories in the unique and delicate setting of post-conflict Somalia. It provides valuable, localized empirical data that both supports and refines Network Effect Theory, demonstrating how mobile money adoption in Mogadishu has reached a critical threshold, thereby spurring substantial economic activity. Simultaneously, the findings strongly validate the Capability Approach by empirically showing that merely having digital infrastructure (IVs) is insufficient to drive comprehensive development. The research clearly points out that the failure to improve microeconomic indicators, such as unemployment, is due to a lack of essential conversion factors among the population. By gathering and analyzing primary data from a key market player and its users, this study fills a specific gap in the literature concerning the real-world impact of telecom services in Somalia, offering a nuanced dataset that goes beyond macroeconomic assumptions to uncover the complex and often uneven reality of digital-led growth.

2. Practical Contribution

This study offers significant practical insights for policymakers, regulatory authorities, and telecommunications firms operating in Somalia, especially in the Banadir area. The results provide a strong, evidence-based case for how investments in telecommunications infrastructure, such as those by Hormuud Telecom, can drive macroeconomic growth, mainly by enhancing financial inclusion through mobile money services. For industry professionals, this study highlights a crucial gap between mere network coverage and service quality, indicating that strategic priorities should shift from expanding geographic reach to improving Internet reliability, speed, and affordability to fully realize business and developmental potential. Additionally, the identified differences in microeconomic benefits emphasize the urgent need for stakeholders to create and support complementary programmes in digital literacy and entrepreneurial training, ensuring that the foundational infrastructure can be effectively converted into tangible economic opportunities for a wider segment of the population, thereby fostering more inclusive and sustainable development.

5.3. Limitations of the Study

This study has several notable limitations that affect the generalizability and strength of its conclusions. The primary limitation is the use of a non-probability sampling technique, specifically Simple random sampling, which targeted Hormuud Telecom employees and customers in an urban setting. This method limits the sample's representativeness and hinders the ability to extend the findings to the wider Somali population, especially those living in rural areas of the country. Moreover, the cross-sectional design of the study captures perceptions at a single moment, preventing the establishment of causal links or observation of the long-term impact of telecommunications on economic development. Additionally, the study relies on subjective, self-reported perceptual data for key economic indicators, such as GDP growth and unemployment rates, rather than verified objective data, which introduces potential bias and inaccuracies. This issue is compounded by the lack of reliable official statistics in Somalia.

5.4. Further Research Studies

Building on the insights and limitations identified in this study, several key directions for future research are suggested to deepen the understanding of the impact of telecommunications on Somalia's economic growth. Future research should adopt longitudinal study designs to monitor the long-term economic impacts of telecom investments, moving beyond the snapshot offered by this cross-sectional study to better establish causality and assess the sustainability of the observed benefits. Additionally, to address urban bias and generalizability issues, research should explicitly compare urban and rural dynamics within the Banadir region and beyond, using stratified sampling to explore how factors such as clan structures, digital literacy, electricity access, and cultural barriers influence the effects of mobile money and internet services on economic outcomes differently. Another important area involves a comprehensive analysis of market structure and its implications, examining the effects of Hormuud's market dominance on pricing, service innovation, and quality, and exploring the potential economic and social externalities of a concentrated market, including cybersecurity risks, data privacy concerns, and consumer protection issues. Finally, to move beyond perceptual data, future research should aim for methodological triangulation with objective metrics, combining the subjective perceptions captured in surveys with concrete data on business revenue, job creation in the digital sector, and mobility patterns of financial transactions through partnerships with telecom operators, the Central Bank, and international organizations to create a more robust and verifiable evidence base.

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AUTHORS' CONTRIBUTIONS

The corresponding author of this paper, Abdimalik Aden Ibrahim, carried out the conception, investigation, methodology, data curation, formal analysis, writing - original draft, writing - review, and editing. Aweis Ahmed Hussein jarras contributed to the investigation, methodology, visualization, validation, writing - original draft, writing - review and editing. All authors have read and approved the final manuscript..

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