

# Journal of Policy Options • RESDO



## Exploring the Benefits and Challenges of Mobile Technology in Ghanaian Small-Scale Enterprises

Frank Owusu<sup>a</sup>, Jacob Novignon<sup>b</sup>

### Abstract

This study explored the use of mobile technology among entrepreneurs and managers of micro and small-scale businesses in the Akuapem North district of Ghana. The key findings revealed that many business owners used multiple mobile phones or subscribed to various network providers. This behavior was influenced by factors such as affordability, service quality, enhanced business operations, security, and effective contact management. These insights underscore the critical role of mobile technology in shaping business strategies for small-scale enterprises in the region. In addition to marketing and sales, mobile phones were used for gathering information, managing product delivery and procurement, and handling internal affairs. A Chi-square test confirmed that mobile phone usage had a positive impact on businesses, contributing to improved customer service, enhanced communication with suppliers and clients, expansion opportunities, competitiveness, and profit growth. However, despite these advantages, respondents also reported several challenges associated with mobile phone usage. These included poor reception, sound distortion, call disruptions, and unexpected call terminations. These challenges highlight infrastructural limitations that can impact business efficiency. The findings suggest that while mobile technology plays a vital role in business growth, improvements in mobile infrastructure are necessary to maximize its benefits. Policymakers and network providers should focus on addressing these connectivity issues to enhance the effectiveness of mobile communication in business operations. Strengthening mobile network infrastructure can further support small businesses in leveraging technology for growth, ensuring that mobile communication remains a reliable and efficient tool for entrepreneurs and business managers in the Akuapem North district.

**Keywords:** Mobile Technology, Small-Scale Businesses, Ghana

**JEL Codes:** L86, O33, M15

### 1. INTRODUCTION

Micro and Small Enterprises have garnered significant attention in recent times from policymakers, politicians, and economic analysts due to their crucial role in economic development. According to Fan (2003), small-scale businesses are considered the engines of economic growth, essential for fostering a competitive and efficient market, and vital in reducing poverty. Roldan and Wong (2008) further emphasize that micro, small, and medium enterprises (MSMEs) play a key role in creating employment, generating income, and redistributing economic opportunities. Similarly, Mazumdar (2001) highlights that MSEs support non-agricultural household enterprises, showcasing their broad contribution to various sectors. In Ghana, the importance of MSEs is particularly well recognized, with Social Security & National Insurance Trust (SSNIT) reporting that about 90% of companies in Ghana fall into this category, employing fewer than 20 people. A notable trend in Ghana has been the increasing display of mobile contact numbers on the signage and shops of MSEs, a practice once associated primarily with medium and large-scale businesses, which typically listed fixed-line numbers. This shift indicates that owners and managers of MSEs are embracing the advancements in information and communication technology (ICT) that Ghana is experiencing. While there are numerous studies on MSEs and mobile phone usage, most of the existing research focuses on urban areas, leaving a gap in understanding how rural and semi-rural MSEs utilize mobile technology.

Key questions arise, such as: Do semi-rural MSEs use mobile phones? If so, how do they use them? What factors motivate their use of mobile phones, and how beneficial have they been to their businesses? What challenges do they face in using mobile phones? Addressing these questions is important for filling the gap in the literature and providing insights into the role of mobile technology in semi-rural business environments. Therefore, this study aims to explore these questions by focusing on a semi-rural district in Ghana, the Akuapem North district, as a case study. The findings from this research will help bridge the existing knowledge gap and shed light on the impact of mobile phone usage on MSEs in less urbanized regions.

### 2. LITERATURE REVIEW

The literature highlights several advantages enjoyed by mobile phone users, particularly in the context of business operations. Kakihara and Sorenson (2002) identify key characteristics of mobile phones, such as interactivity, spatial mobility, temporal mobility, and contextual mobility, which are not available when using traditional landlines. Mobile phone users also benefit from flexibility, connectivity, ubiquity (Barnes, 2002), and location awareness (Henfridsson and

<sup>a</sup> Department of Business Economics, Presbyterian University College Ghana, Akuapem Campus, Akropong-Akuapem, Eastern Region, Ghana

<sup>b</sup> Department of Business Economics, Presbyterian University College Ghana, Akuapem Campus, Akropong-Akuapem, Eastern Region, Ghana

Lindgren, 2003), all of which can significantly enhance the operational efficiency of organizations (Barnes, 2002). Rayport and Jaworski (2004) further emphasize that mobile phones facilitate efficient production, aid in the distribution and marketing of products and services, and help businesses understand international markets (Hooper et al., 2010). Additionally, Madon (2000) and Khalil (2003) have highlighted the direct link between electronic communication, information access, and poverty reduction (Ojukwu, 2006). Earl (1988) argues that organizations that invest in ICT, including mobile technology, benefit from a competitive edge, improved productivity and performance, innovative management and organizational strategies, and the development of new business opportunities (Ojukwu, 2006). Esselaar et al. (2007) also note the ease of mobile phone usage, which requires minimal training, making it accessible to a wide range of users. Roldan and Wong (2008) underscore the importance of mobile phones for micro and small-scale businesses. They assert that mobile phones serve as productive tools, facilitating the gathering and dissemination of information and creating networking opportunities. Mobile phones allow business owners to conduct transactions, such as completing orders or bids, which helps save valuable time. Furthermore, by eliminating economic boundaries, mobile phones enable users to reach business partners or customers easily, thus expanding their market reach. The networking potential of mobile phones is also highlighted, as the use of mobile technology increases the likelihood of encountering new business opportunities. Jensen (2007) adds that mobile phones help achieve better prices for services and reduce price dispersion (Rabayah and Qalalwi, 2011; Imran et al., 2021).

Aker and Mbiti (2010) identify five key benefits of mobile phone usage for both consumers and producers. These include improved access to and use of information, which reduces search costs, enhances coordination among agents, and increases market efficiency. Mobile phones also improve productive efficiency and facilitate communication among social networks in response to shocks, thereby reducing households' exposure to risk. According to Corbett (2008), the recent surge in mobile phone usage in Africa has led policymakers to consider mobile technology as a transformative tool with the potential to alleviate poverty through innovative applications and services (Aker and Mbiti, 2010). However, it is important to note that several factors may influence the use of mobile phones by enterprises. Zhang and Yuan (2002) mention the costs associated with mobile phone usage, while Hooper and Zhou (2007) highlight the personal attributes of the user, the influence of others, and the motivation to use mobile technology. Additionally, Mehrtens et al. (2001) discuss the perceived organizational benefits and organizational readiness as factors influencing mobile phone adoption (Hooper et al., 2010). These factors underscore the complexities surrounding the adoption and utilization of mobile technology by businesses, particularly in developing economies.

Several empirical studies have confirmed the numerous benefits associated with mobile phone usage, particularly for small-scale entrepreneurs. One notable study by Samuel et al. (2005) found that around 60% of micro-entrepreneurs in South Africa, Tanzania, and Egypt reported increased business profitability as a result of mobile phone usage (Donner, 2006). Another significant study by Jensen (2007) examined the impact of mobile phones on the fishing industry in Kerala, India. The study observed that mobile phone coverage led to a reduction in the dispersion of fish prices across different markets and resulted in an 8% increase in the profits of fishermen (Rabayah and Qalalwi, 2011). Esselaar et al. (2007) conducted a survey across 14 African countries and found that entrepreneurs with mobile phones primarily used them to maintain contact with customers and clients more frequently than any other mode of communication. In Ghana, Boadi et al. (2008) studied the impact of mobile phone usage on farmers and fishermen, discovering that mobile commerce (m-commerce) helped reduce costs and offered opportunities for deepening both internal and external business relationships. Muto and Yamano (2009) explored the impact of mobile phones on agricultural markets in Uganda, using a panel dataset on farm households from 2003 to 2005. Their findings suggested that mobile phone coverage increased farmers' market participation probability for perishable crops, like bananas, by 10%, compared to crops like maize (Aker and Mbiti, 2010). This indicated that mobile phones are especially valuable for managing perishable goods in markets. In Palestine, Rabayah and Qalalwi (2011) conducted a study between 2007 and 2009 and found that mobile phone penetration surpassed other ICT indicators. They discovered that 84% of enterprises used mobile phones for information-related purposes that were valuable for their businesses. Additionally, 38% of respondents used their mobile phones to manage internal operations, while 84.4% reported an improvement in their responsiveness to customers. However, the study also highlighted that enterprises showed less concern for other potential benefits of mobile phones, such as lowering operational costs, improving product and service quality, staying competitive, or bypassing middlemen. These studies underscore the significant role that mobile phones play in enhancing business efficiency, profitability, and market participation, particularly in developing economies and sectors reliant on time-sensitive products like agriculture and fishing. However, they also suggest that some enterprises may underutilize mobile technology's full potential, particularly in areas like cost reduction and improving service quality.

### 3. METHODOLOGY

The Akuapem North District, established in 1988 by Legislative Instrument (LI) 1430, was previously part of the Akuapem District Council, which was formed in 1975. Akropong serves as the district capital, with other major towns including Mampong, Adukrom, Larteh, Abirwi, Awukugua, Mamfe, and Dawu. Located in the southeastern part of Ghana's Eastern Region, the district is approximately 58 km from Accra, the capital of Ghana. Covering an area of about 450 sq. km, it represents 2.3% of the total land area of the Eastern Region. Agriculture is the primary occupation of the district's population, with major crops such as cassava, maize, yam, plantain, potatoes, fruits, and vegetables being cultivated. In addition, non-traditional products like snails and mushrooms are gaining prominence, offering opportunities for investors to tap into emerging export markets and earn foreign currency. The arts and crafts industry also thrives in the district, with artisans excelling in ceramic production and wood carving. The manufacturing industry, which employs

over 50% of those working in the industrial sector, is another significant contributor to the district's economy. This sector encompasses carpentry, bakery, pottery, and blacksmithing. The agro-industry sector includes activities such as oil palm production, rice milling, corn milling, flour milling, mushroom cultivation, beekeeping, and carbolic soap production. For this study, three towns—Akropong (the district capital), Adukrom, and Mampong—were specifically selected. These towns were chosen because they are the largest in the district and have a relatively high concentration of Micro and Small Enterprises (MSEs), which would aid in the research. Since there was no official data on registered small-scale businesses in the district, the study targeted 100 respondents, focusing on business owners or managers. The primary data collection instrument used was a questionnaire, chosen for its ability to provide standardized responses. To ensure accuracy, the questionnaires were administered to business owners, managers, or individuals in positions that allowed them to answer the questions reliably. Two research assistants were deployed to the selected towns to collect data between December 20, 2011, and January 28, 2012. Out of the 100 targeted respondents, 94 completed and returned the questionnaires, which were used for the study's analysis. The data collected was analyzed using SPSS version 16.0, providing valuable insights into the research objectives.

#### 4. RESULTS AND DISCUSSIONS

The study delved into several key aspects related to the use of mobile phones by micro and small-scale entrepreneurs/managers, including demographic characteristics, the number of mobile phones and networks registered, the uses and benefits of mobile phones for business, as well as the challenges encountered.

Table 1 presents the distribution of mobile phone and SIM card usage among small-scale enterprise operators in Ghana. The data highlights that the majority of respondents (70.2%) rely on a single mobile phone, suggesting cost-consciousness and limited technological integration at the micro-enterprise level. However, a significant portion (25.5%) indicated the use of two mobile phones, which may reflect business-related multitasking, such as managing personal and work-related contacts separately or ensuring better network coverage in areas with unreliable services.

The use of multiple SIM cards is also prevalent, with 48.9% of participants using one SIM card, while 40.4% operate with two. This suggests that small business owners may seek to optimize communication by leveraging different network providers for affordability, promotions, or improved connectivity—especially in regions where no single provider guarantees consistent service. The findings are in line with previous studies such as Aker and Mbiti (2010), who observed that mobile phone diffusion in sub-Saharan Africa was driven by economic necessity and infrastructural limitations.

The presence of respondents using three or more SIM cards (11.7%) or multiple devices (6.5% using three or more phones) implies a subset of users with more complex communication needs. This trend, although less common, may indicate an advanced entrepreneurial approach to maintaining constant connectivity with clients, suppliers, and markets. As pointed out by Donner (2006), mobile phones are not just communication tools but essential instruments in improving efficiency and flexibility in informal and small-scale trading environments.

These findings point to both the benefits and challenges of mobile technology adoption. On one hand, multiple phone and SIM card use enhances accessibility and communication efficiency. On the other hand, it reflects persistent infrastructural gaps that necessitate workaround strategies. For small-scale enterprises, mobile technology offers vital opportunities for growth, but inconsistent network quality and high operational costs remain significant barriers.

**Table 1: Number of Mobile Phone and Sim cards usage Mobile Phones**

Number of Phones	Frequency	Percentage
1	66	70.2
2	24	25.5
3	2	2.1
4	2	2.2
<b>Sim Cards/network</b>		
Number of sim cards/network	Frequency	Percentage
1	46	48.9
2	38	40.4

Number of sim cards/network	Frequency	Percentage
3	7	7.4
4	3	3.2
5	1	1.1

Table 2 reveals the various factors influencing the choice of a mobile network among Ghanaian small-scale entrepreneurs. The most significant determinant appears to be reception quality, cited by 72.8% of respondents. This suggests that uninterrupted signal strength and reliable connectivity are critical for these businesses, which often depend on real-time communication with clients and suppliers. This finding supports previous work by Jagun, Heeks, and Whalley (2008), who emphasized the importance of mobile networks in improving business responsiveness and operational efficiency in informal markets.

Network coverage is the second most cited factor at 63.2%, highlighting the geographical reach of a network as a major consideration. In rural and peri-urban areas where some networks may have weak or no signal, users are likely to choose providers with broader coverage. This aligns with the findings of Qiang, Rossotto, and Kimura (2009), who noted that mobile coverage expansion directly enhances access to economic opportunities, especially in developing regions.

Business activity, selected by 47.3%, reflects the functional dependence of enterprise operations on mobile connectivity. Entrepreneurs likely value networks that support smooth communication and transactions, especially as many use mobile money and digital platforms for daily operations. This indicator underscores how network selection is shaped not only by individual preferences but also by the nature and demands of the business environment.

Cost of using the phone (42.1%) and customer service quality (34.9%) also play substantial roles in network choice. This suggests a strong sensitivity to tariffs and after-sales support, especially for entrepreneurs operating with limited margins. Favorable call/data rates and helpful service centers could significantly influence user loyalty and satisfaction. As pointed out by Esselaar et al. (2007), affordability and user support remain key to sustained mobile adoption in developing economies. Phone functionality (18.9%), though the least cited factor, still represents an important consideration for a subset of users who may require compatibility with apps or specific services. It reflects the growing technological literacy and evolving needs of entrepreneurs using mobile phones for more than just basic calling or texting.

In summary, Table 2 highlights that service reliability, affordability, and business integration are pivotal in shaping mobile network preferences among small-scale enterprises. These insights can inform network providers and policymakers seeking to enhance digital inclusion and support microenterprise development.

**Table 2: Factors considered in the choice of a network**

Indicator	Percentages
Coverage	63.2
Cost of using phone	42.1
Phone functionality	18.9
Business activity	47.3
Reception	72.8
Customer services	34.9

Table 3 presents the various ways in which mobile phones are utilized in small-scale business activities in Ghana, underscoring their multifaceted role in enterprise operations. The highest percentage, 55.9%, corresponds to gathering information, indicating that entrepreneurs heavily rely on mobile devices to access market trends, product details, customer feedback, or competitor

pricing. This aligns with findings from Donner and Escobari (2010), who noted that mobile phones significantly improve information asymmetry in developing economies, thereby enhancing decision-making and responsiveness.

Marketing and sales constitute the second most common use at 54.6%, highlighting the strategic importance of mobile phones in promoting products, engaging customers, and executing mobile-based advertising. Given the increasing adoption of platforms like WhatsApp, Facebook, and SMS marketing in local business models, this statistic reflects the shifting landscape of marketing in micro and small enterprises. According to Chigona and Lekwane (2011), mobile devices empower informal traders to reach wider markets with minimal cost.

Closely following is the use of mobile phones for product delivery and procurement (49.1%). This suggests that logistics coordination—such as contacting suppliers, arranging pickups, or confirming deliveries—is increasingly dependent on mobile communication. It enables entrepreneurs to reduce transaction costs and improve supply chain efficiency, echoing the arguments by Aker and Mbiti (2010) that mobile phones reduce market frictions in trade and distribution.

Managing internal operations, such as inventory checks, staff coordination, or scheduling, is reported by 40.8% of users. This reinforces the growing perception of mobile phones as essential management tools, especially in businesses that may not yet have adopted formal enterprise systems. The capability to handle operational matters remotely is particularly valuable in resource-constrained environments where mobility and time management are critical.

Banking services are accessed by 13.3% of respondents, indicating a modest but growing reliance on mobile banking platforms and digital finance services. This figure, though lower, is significant given the increasing push for financial inclusion through mobile money in Africa. It is supported by Jack and Suri (2011), who demonstrated how mobile financial services enhance savings and liquidity among informal sector participants.

Internet access (28.6%) and data processing (8.2%) represent emerging uses, particularly as smartphones become more accessible. Though these figures are comparatively low, they suggest potential for growth in digital skills and technological adaptation. They also signal the early integration of cloud-based apps and online platforms into business processes.

In essence, Table 3 illustrates how mobile phones serve as vital tools not only for external communication and sales but also for internal management and strategic planning in small-scale enterprises. This technological engagement is gradually transforming traditional business models and fostering entrepreneurial resilience in Ghana's informal economy.

**Table 3: Mobile Phone Usage relating to business activities**

Usage	Percentage
Data Processing	8.2
Marketing/sales	54.6
Product delivery/procurement	49.1
Managing internal operations	40.8
Banking services	13.3
Gathering information	55.9
Internet access	28.6

Table 4 reflects the frequency of mobile phone service usage among small-scale enterprise users in Ghana and highlights the dominance of traditional communication modes over advanced digital features. Voice calls are used frequently by 95.2% of respondents, with no reported non-users. This overwhelming reliance confirms the primacy of basic mobile telephony as a cornerstone of business operations, especially in contexts where literacy barriers, digital infrastructure gaps, or cost considerations may limit more sophisticated forms of communication (Aker & Mbiti, 2010).

Text messaging also shows substantial usage, with 42.6% of respondents using it frequently and another 36.8% occasionally. This medium, particularly SMS, provides a cost-effective, asynchronous communication channel useful for sending customer notifications, transaction confirmations, or coordination messages. It is especially relevant in areas with unstable internet coverage or where smartphone penetration is limited (Donner, 2008).

In contrast, internet access shows a much lower frequency, with only 28.9% of users accessing it frequently and a striking 65% reporting never using it. This gap suggests significant limitations in digital literacy, data affordability, or access to smartphones capable of browsing. While digitalization trends are expanding globally, the data reflect a persistent digital divide in many informal economies, as noted by Chigona and Lekwane (2011).

Email access follows a similar pattern, with 72.9% never using the service. Only 17.7% use it frequently, reinforcing the notion that most micro-enterprises operate outside formalized structures where email communication is standard. The relatively low engagement with email may also reflect a preference for faster, informal messaging tools such as WhatsApp, which combine low-cost communication with multimedia support (Donner & Escobari, 2010).

Video calls register the least frequent usage, with only 5.5% of respondents engaging with them often, and 82.2% never using them. This indicates that video-based communication is still not widely integrated into small-scale business practices, likely due to the high data demands and limited device compatibility. However, as smartphone access improves, this figure may increase over time, particularly for client consultations, product demonstrations, or supplier meetings in more tech-forward sectors.

Overall, Table 4 illustrates a clear hierarchy in service usage, with voice calls and text messages dominating communication strategies while internet-based features remain underutilized. This insight underscores the need for targeted interventions in digital literacy and infrastructure to bridge the gap between basic and advanced mobile functionalities.

**Table 4: Frequency of services usage**

Service	Frequently (%)	Occasionally (%)	Never (%)
Voice calls	95.2	4.8	0.0
Send text message	42.6	36.8	20.6
Access the internet	28.9	6.1	65.0
Access email	17.7	9.4	72.9
Video calls	5.5	12.3	82.2

Table 5 presents a statistical overview of the perceived benefits derived from mobile phone usage among Ghanaian small-scale enterprises, along with the results of chi-square tests measuring the significance of these perceptions. The highest reported benefit is improved communication with suppliers and customers, cited by 66.2% of respondents. The associated chi-square value of 12.487 ( $p < 0.01$ ) confirms that this relationship is statistically significant, supporting past research that emphasizes mobile technology's role in enhancing business networks and supply chain efficiency in developing markets (Jagun et al., 2008; Duncombe & Heeks, 2002).

Lower operational costs or increased savings were acknowledged by 54.1% of respondents, though this benefit does not reach statistical significance ( $\chi^2 = 1.629$ ). This may reflect mixed experiences where some users achieve cost reductions while others encounter high mobile service charges or data expenses. Still, the majority endorsement suggests that mobile phones are often viewed as economically advantageous tools, consistent with studies indicating that ICT adoption leads to cost-efficiency in micro-enterprise contexts (Donner, 2006).

A substantial 41.3% of respondents believed that mobile phones improved customer services, and this was statistically significant ( $\chi^2 = 3.654$ ,  $p < 0.05$ ). Mobile phones enable quicker responses to customer inquiries, faster order fulfillment, and more personalized engagement, thereby increasing

satisfaction and loyalty—especially in competitive informal markets where customer retention is crucial (Kaplan, 2012).

Interestingly, although only 11.1% of enterprises reported that mobile phones helped them open new branches, the chi-square value is the highest in the table at 58.201 ( $p < 0.01$ ), suggesting a strong and significant association. This outcome could indicate that while the expansion effect applies to a limited segment, the impact is substantial for those enterprises that manage to scale using mobile connectivity, perhaps through mobile payments, online marketing, or remote customer outreach.

Similarly, increased profits (12.9%) and improved product/service delivery (18.7%) also yield highly significant chi-square results (52.788 and 40.743, respectively; both  $p < 0.01$ ). These findings suggest that even if not widely reported, the economic impact of mobile usage is meaningfully concentrated among certain users—likely those who integrate mobile technology deeply into their operations.

Moreover, 22.3% indicated that mobile phones help them stay competitive, and the corresponding  $\chi^2$  value of 31.014 is statistically significant ( $p < 0.01$ ). In an increasingly digitalized marketplace, mobile connectivity has become a vital differentiator, helping small firms monitor prices, track competitors, or access real-time market information (Aker & Mbiti, 2010).

In summary, Table 5 validates the multifaceted value of mobile phone technology in enhancing communication, improving service delivery, and enabling business growth. While the most widely recognized benefits are related to communication and savings, statistically significant gains in competitiveness, expansion, and profitability reveal the broader transformative potential of mobile phones for micro-enterprises in low-income contexts.

**Table 5: Benefit from using mobile phones**

Benefit	Percentages	Chi square test
Lower operational cost/increased savings	54.1	1.629
Improved customer services	41.3	3.654**
Improved communication with suppliers/customers	66.2	12.487***
Open up new branch	11.1	58.201***
Improved product/service delivery	18.7	40.743***
Keep up with competitors	22.3	31.014***
Increased profit	12.9	52.788***

Table 6 outlines the major challenges that small-scale enterprise users in Ghana face while using mobile phones for business activities. The most frequently reported issue is poor network reception, experienced by 92.7% of respondents. A significant portion (66.8%) encounter this challenge occasionally, whereas 33.2% face it regularly. This indicates that infrastructural deficiencies in mobile connectivity remain a persistent barrier to maximizing mobile phone utility, particularly in rural or underdeveloped areas (Donner, 2008).

Similarly, poor sound quality and call disruptions are prevalent. About 86.2% of users report audio issues like voice breaking up during calls, while 80.4% note that calls often end unexpectedly. Both problems are more commonly experienced occasionally than regularly, with over 79% of such disruptions occurring sporadically. These technical constraints can severely hinder communication with suppliers and customers, reducing efficiency and leading to miscommunications or missed opportunities (Aker & Mbiti, 2010).

Text messaging issues are also prominent. About 68.4% of respondents report being unable to send text messages at times, and 61.1% note problems receiving them. Again, most users face these issues occasionally rather than frequently, but the high prevalence suggests that even basic SMS functions, often critical in low-data environments, are not always reliable. These inconsistencies

could reduce trust in mobile platforms and limit users' willingness to adopt mobile financial services or customer engagement tools that depend on messaging features (Asongu et al., 2016). In conclusion, Table 6 highlights that while mobile phones offer significant business advantages, technical limitations such as network unreliability, dropped calls, and inconsistent messaging services still undermine their effectiveness. Addressing these challenges through policy interventions, improved infrastructure, and more reliable service provision is essential for empowering small-scale entrepreneurs to fully leverage mobile technology in Ghana's evolving digital economy.

**Table 6: Challenges in using mobile phone**

Challenge	Overall (%)	Regular (%)	Occasionally (%)
No reception	92.7	33.2	66.8
Calls end unexpectedly	80.4	20.1	79.9
Poor sound quality/breaking up	86.2	19.5	80.5
Unable to send text message	68.4	15.8	84.2
Unable to receive text message	61.1	25.6	74.4

## 5. CONCLUSION

This study examined the use of mobile technology among entrepreneurs and managers of Micro and Small Enterprises (MSEs) in the semi-rural Akuapem North district of Ghana. The findings revealed that the majority of respondents used a single mobile phone and had subscribed to only one network out of the five mobile telecommunication operators available in the country at the time. A smaller number of respondents used two, three, or even four mobile phones, or subscribed to multiple networks. These individuals cited reasons such as the need to make more affordable calls and to avoid poor service quality from certain network providers. This suggests that, while mobile technology is widely used, the quality of service and cost efficiency remain important factors influencing network and phone choices for MSEs in the district. In addition to affordability and service quality, respondents also cited business purposes, security concerns, and the need for sufficient phone storage to maintain contact numbers as reasons for using multiple mobile phones or subscribing to more than one network. When selecting a network, the top factors considered by the entrepreneurs and managers were reception, network coverage, and the nature of their business activities. Other factors that influenced their choice of network included the cost of using the phone, the quality of customer service provided by the network, and the functionality of the mobile phone itself. These insights highlight how practical business needs, alongside cost and service quality, shape mobile phone usage among MSEs in the Akuapem North district. In terms of business activities and mobile phone usage, more than half of the respondents reported using their phones for marketing and sales purposes, as well as for gathering information. Additional uses of mobile phones included facilitating product delivery and procurement, managing internal affairs, accessing the internet, conducting banking services, and processing data. The study also found that nearly 97% of respondents used their phones primarily for making voice calls, followed by sending text messages and accessing the internet. Video calling was the least utilized service among the respondents. Mobile phone usage has provided significant benefits to MSEs in the Akuapem North district of Ghana. The findings revealed that mobile phones have helped lower operational costs and increased savings for many businesses. Additionally, they have improved customer service, enhanced communication with suppliers and customers, facilitated the opening of new business branches, and enabled MSEs to stay competitive in their respective markets. Ultimately, the use of mobile technology has contributed to increased profits for these businesses, underscoring its positive impact on their overall operations and growth. Despite the many benefits MSEs derive from mobile phone usage, respondents also reported several challenges. The top three issues identified were lack of reception, poor sound quality or breaking up of sound, and calls ending unexpectedly. Additional problems included difficulties in sending and receiving text messages. However, respondents noted that these challenges were experienced only occasionally. As a result, only 30.1% of respondents actively sought to address the issues they faced. Their strategies for tackling these challenges included contacting their network providers either by phone or through in-person visits to their offices, as well as switching to other networks they believed would offer better service quality. Given these findings, it is recommended that businesses not yet utilizing mobile phones should



consider adopting the technology to take advantage of its numerous benefits. Furthermore, additional research could be conducted to explore how these occasional mobile phone challenges affect business activities and whether addressing these issues more proactively could enhance business performance.

## REFERENCES

- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207-232.
- Asongu, S. A., Nwachukwu, J. C., & Orim, S. M. I. (2016). Mobile phones, institutional quality and entrepreneurship in Sub-Saharan Africa. *Technological Forecasting and Social Change*, 120, 44-56.
- Barnes, S. J. (2002). Unwired business: Wireless applications in the firm's value chain. *Sixth Pacific Asia Conference on Information Systems*, Tokyo, Japan.
- Boadi, R. A., Boateng, R., Hinson, R., & Opoku, R. A. (2008). Preliminary insights into m-commerce adoption in Ghana. *Information Development*, 23, 253-265.
- Chigona, W., & Lekwane, N. (2011). Perceptions of South African informal sector on the use of mobile phones. *Journal of African Business*, 12(2), 176-193.
- Donner, J. (2006). The use of mobile phones by micro-entrepreneurs in Kigali, Rwanda: Changes to social and business networks. *Information Technologies and International Development*, 2, 3-19.
- Donner, J. (2008). Research approaches to mobile use in the developing world: A review of the literature. *The Information Society*, 24(3), 140-159.
- Donner, J., & Escobari, M. X. (2010). A review of evidence on mobile use by micro and small enterprises in developing countries. *Journal of International Development*, 22(5), 641-658.
- Duncombe, R., & Heeks, R. (2002). Enterprise across the digital divide: Information systems and rural microenterprise in Botswana. *Journal of International Development*, 14(1), 61-74.
- Esselaar, S., Stork, C., Ndiwalana, A., & Deen-Swarrray, M. (2007). ICT usage and its impact on profitability of SMEs in 13 African countries. *Information Technologies and International Development*, 4(1), 87-100.
- Fan, Q. (2008). Importance of SMEs and the role of public support in promoting SME development. *Creating a Conducive Legal & Regulatory Framework for Small and Medium Enterprise Development in Russia*, A Policy Dialogue Workshop, St. Petersburg, Russia, September 14-16.
- Henfridsson, O., & Lindgren, R. (2003). Facilitating in-car use of multi-context mobile services: The case of mobile telephone conversations. *Americas Conference on Information Systems*, Tampa, Florida.
- Hooper, V., Kew, J., & Herrington, M. (2010). The use of mobile phones by SMMEs in a developing economy: The case in South Africa. *18th European Conference on Information Systems*.
- Imran, C. A. B., Shakir, M. K., & Qureshi, M. A. B. (2021). Regulatory Perspectives on AI in Autonomous Vehicles Global Approaches and Challenges. *The Asian Bulletin of Green Management and Circular Economy*, 1(1), 62-74.
- International Telecommunication Union. (2008). *World Telecommunication Indicators Database*. Geneva: International Telecommunications Union.
- Jack, W., & Suri, T. (2011). Mobile money: The economics of M-PESA. *National Bureau of Economic Research Working Paper No. 16721*.
- Jagun, A., Heeks, R., & Whalley, J. (2008). The impact of mobile telephony on developing country micro-enterprise: A Nigerian case study. *Information Technologies and International Development*, 4(4), 47-65.
- Kakihara, M., & Sørensen, C. (2002). Mobility: An extended perspective. *35th Hawaii International Conference on System Sciences*, Maui, Hawaii.
- Kaplan, A. M. (2012). If you love something, let it go mobile: Mobile marketing and mobile social media 4x4. *Business Horizons*, 55(2), 129-139.
- Mazumdar, D. (2001). Small-Medium enterprise development in equitable growth and poverty alleviation. *Asia and Pacific Forum on Poverty: Reforming Policies and Institutions for Poverty Reduction*, held at the Asian Development Bank, Manila, February 5-9.
- Ojukwu, D. (2006). Achieving sustainable growth through the adoption of integrated business and information solutions: A case study of Nigerian small & medium-sized enterprises. *Journal of Information Technology Impact*, 6(1), 47-60.
- Qiang, C. Z., Rossotto, C. M., & Kimura, K. (2009). Economic impacts of broadband. In *Information and communications for development 2009: Extending reach and increasing impact* (pp. 35-50). World Bank.
- Rabayah, K. S., & Qalalwi, K. (2011). The impact of mobile telephony on developing country enterprises: A Palestinian case study. *The Electronic Journal on Information Systems in Developing Countries*, 46(4), 1-20.
- Roldan, G., & Wong, A. (2008). Building micro-enterprises through information and communication technologies (ICT) in Bangladesh. *Teletronikk*, 2.
- World Bank. (2010). *World Development Indicators*. Washington, DC.