GSMA

Barriers To Smartphone Adoption In Kenya:

A Case Study of Kenya



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Prepared by Qhala team

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Executive Summary

Recent years have seen the proliferation of new technologies. This has impacted different aspects of life across the world, and revolutionised how business is conducted. Despite the multiple obvious advantages of adopting and using smartphone in Africa, barriers still exist. This has slowed down adoption of the new digital technologies and delayed their potential value. This research aimed at identifying barriers to smartphone adoption in Africa, focusing on Kenya as a case study.

The main factors driving smartphone adoption, as identified by the study are: customers' ability to afford a smartphone, and their interest in its features. Based on customer feedback, this report presents four sets of recommendations that could help to promote smartphone adoption and use in Kenya. In collaboration with a service provider in Kenya, some of these recommendations were implemented for six months, between October 2023 and March 2024, and tracked, to measure impact.

This study's findings highlight the importance of an enabling policy and regulatory environment to facilitate local assembly of smartphones as one of the interventions to enhance access to affordable devices. The study also emphasises the importance of a partner ecosystem in Africa's mobile phone industry to encourage collaboration, innovation, and sharing of resources for increased adoption and usage of smartphones in the continent.

List of Abbreviations

FSPs: Financial Service Providers

MNOs: Mobile Network Operators

FGDs: Focus Group Discussions

SSA: Sub-Saharan Africa

GSMA: Global System for Mobile Communications

IDIs: In-Depth Interviews

KIIs: Key Informant Interviews

ICT: Information and Communication Technology

BNPL: Buy Now Pay Later

LMM: Lipa Mdogo Mdogo

CA: Communication Authority of Kenya

M&E: Monitoring and Evaluation

GSM: Global System for Mobile Communication

VAT: Value Added Tax

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1.0
Background



Mobile phones are increasingly driving economic growth and creating opportunities throughout Africa [1]. Smartphones, in particular, have contributed significantly to economic growth. For individuals, there are a variety of use cases that address day-to-day needs, besides facilitating m-commerce transactions conveniently and securely without need for a traditional bank account, thereby enhancing the quality of life and enhancing financial inclusion. In business, entrepreneurs can improve performance and achieve growth by accessing a broader market, while consumers now enjoy greater convenience and access to a wider variety of services. This cyclic economic activity fuels job creation, income generation, and overall economic development in the region[2].

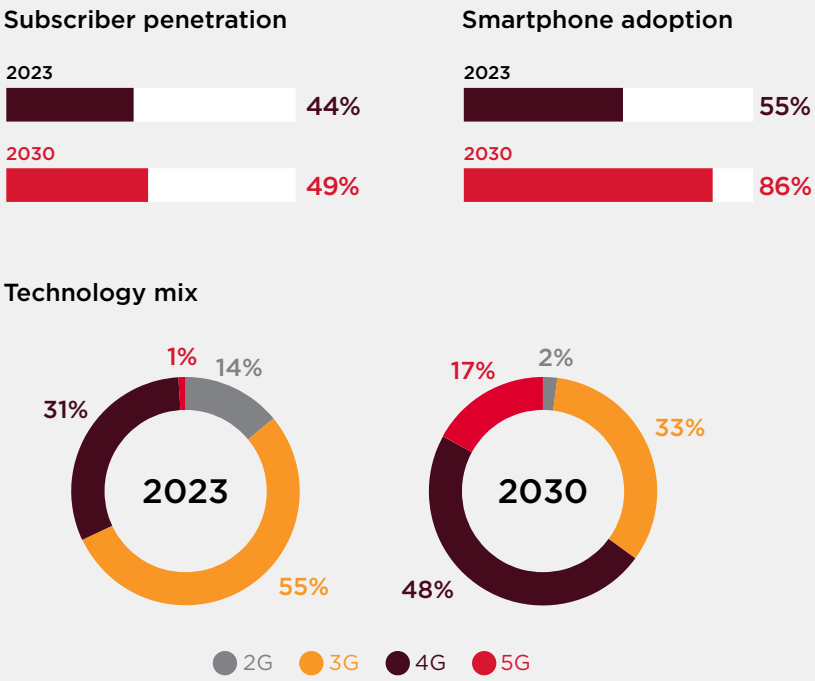
Although smartphone adoption is growing and approaching saturation in developed countries, Sub-Saharan Africa (SSA) is still lagging, with smartphone adoption at 55%[3].

Figure 1

Smartphone adoption in Sub-Saharan Africa



Smartphone adoption refers to the number of people who own and use a smartphone; while **Smartphone penetration** is the percentage of the population actively using a smartphone.



Source: GSMA Intelligence

Mobile Network Operators (MNOs) in SSA have rolled out several initiatives including device financing plans (subsidies and instalment payments), partnerships to boost access to smartphones (device and data plan schemes), and introduction of entry-level smartphones that are driving smartphone adoption in the region[1]. In addition, MNOs have made huge investments to improve their networks' coverage, with 3G, 4G and 5G, accounting for 55%, 31%, and 1% respectively of the total connections in 2023. These continued efforts have significantly reduced the number of unconnected citizens; as at the end of 2022, 85% of the population was covered by a mobile broadband network[1].

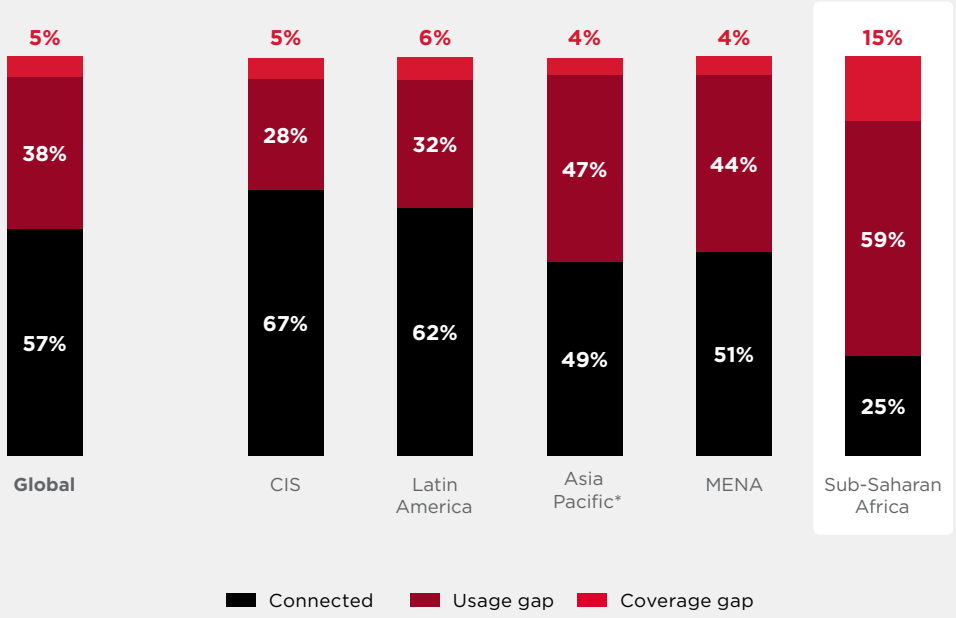
1 The Mobile Economy: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/wp-content/uploads/2024/02/260224-The-Mobile-Economy-2024.pdf

2 Mobile goes global: The effect of cell phones on economic growth and development: https://digitalcommons.bucknell.edu/cgi/viewcontent.cgi?article=1003&context=honors_theses#:~:text=In%20addition%2C%20mobile%20phones%20can,phone%2Dbased%20services%20and%20products.

3 The Mobile Economy 2023: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/wp-content/uploads/2023/03/270223-The-Mobile-Economy-2023.pdf

Figure 2

Mobile Internet Connection by regions, 2022



* Excludes China
Source: GSMA Intelligence

However, despite the availability of affordable smartphones and wide mobile broadband coverage, Africa's usage gap (the percentage of the population covered by mobile broadband but not using it) is still wide compared to other regions[4]. Research on the growing usage gap in Africa highlights smartphone affordability, low levels of digital literacy levels, concerns over device safety and security, limited access to the internet, and irrelevant online content among the major barriers to smartphone ownership and mobile internet use[5]. Whereas governments in SSA have been implementing digital literacy programmes, among other initiatives, to encourage smartphone adoption and mobile internet access, the usage gap is budging ever so lightly[6].

4 The State of Mobile Internet Connectivity 2023: https://www.gsma.com/r/wp-content/uploads/2023/10/State-of-Mobile-Internet-Connectivity-2023-Sub-Saharan-Africa.pdf
5 The State of Mobile Internet Connectivity 2023: https://www.gsma.com/r/wp-content/uploads/2023/10/The-State-of-Mobile-Internet-Connectivity-Report-2023.pdf
6 Use of ICT to Promote Literacy in Sub-Saharan Africa: https://journals.e-palli.com/home/index.php/ajmri/article/view/118

Figure 3

Barriers to mobile Internet use in Africa

Percentage of mobile users who are aware of mobile internet but do not use it, identified the following as their single most important barrier to using mobile internet

		AFFORDABILITY				LITERACY AND DIGITAL SKILLS								RELEVANCE				SAFETY AND SECURITY						ACCESS													
		Handset cost		Data cost		Do not know how to access internet on a mobile		Do not know how to use a mobile		Reading/ writing difficulties		Do not have time to learn how to access internet on a mobile		Not sufficient support in learning to use internet		Internet is not relevant for me		Insufficient content in local language		Harmful content (self/ family)		Strangers contacting me		Information security		Internet drains my battery		Network coverage		Family does not approve		Access to agent support		Slow connection/ cannot do what I want		No access to internet enabled phone		Hard to find where to buy internet enabled phone	
		U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R	U	R
AFRICA	Egypt	24%	22%	3%	6%	2%	2%	5%	3%	21%	16%	6%	3%	2%	2%	11%	12%	0%	3%	5%	3%	0%	6%	2%	8%	0%	2%	6%	2%	6%	7%	0%	1%	4%	0%	4%	0%	0%	0%
	Ethiopia	39%	29%	3%	3%	13%	10%	1%	2%	4%	28%	7%	3%	1%	1%	11%	5%	2%	0%	1%	1%	3%	1%	0%	1%	0%	2%	5%	8%	2%	0%	0%	0%	2%	2%	1%	0%	5%	4%
	Ghana	50%	45%	8%	5%	4%	7%	4%	0%	15%	15%	4%	3%	0%	3%	9%	12%	1%	0%	1%	0%	0%	2%	1%	0%	2%	1%	0%	1%	1%	2%	0%	0%	0%	1%	0%	2%	1%	1%
	Kenya	51%	52%	4%	6%	4%	3%	0%	1%	2%	7%	4%	3%	3%	1%	13%	13%	0%	1%	9%	3%	3%	0%	0%	2%	1%	4%	0%	1%	0%	0%	1%	0%	1%	0%	2%	0%	1%	2%
	Nigeria	39%	34%	4%	6%	2%	4%	3%	3%	20%	29%	2%	2%	3%	0%	11%	7%	2%	1%	2%	2%	4%	1%	2%	2%	0%	0%	1%	2%	4%	2%	0%	0%	1%	2%	0%	2%	1%	0%
	Senegal	49%	57%	2%	4%	8%	2%	5%	0%	7%	12%	8%	4%	0%	1%	5%	6%	0%	0%	2%	1%	0%	1%	6%	2%	0%	1%	5%	2%	0%	0%	0%	1%	0%	2%	0%	4%	3%	0%
ASIA	Bangladesh	3%	11%	4%	3%	6%	4%	4%	5%	25%	18%	2%	4%	3%	1%	20%	16%	2%	4%	4%	7%	6%	6%	5%	2%	0%	0%	4%	4%	5%	8%	0%	0%	4%	2%	2%	1%	0%	2%
	India	14%	15%	8%	4%	13%	15%	6%	1%	16%	16%	3%	6%	4%	2%	5%	5%	5%	2%	3%	3%	0%	1%	2%	9%	2%	6%	6%	4%	2%	4%	2%	1%	5%	2%	1%	3%	2%	0%
	Indonesia	26%	24%	14%	16%	12%	16%	0%	2%	0%	13%	12%	2%	2%	2%	12%	12%	2%	0%	2%	1%	6%	1%	4%	2%	0%	0%	2%	4%	2%	0%	2%	1%	2%	2%	0%	3%	0%	0%
	Pakistan	18%	14%	4%	4%	1%	4%	7%	8%	29%	19%	3%	3%	3%	1%	15%	11%	3%	6%	0%	3%	1%	3%	0%	3%	0%	1%	1%	2%	10%	9%	0%	1%	1%	2%	1%	3%	2%	1%
LATIN AMERICA	Guatemala	7%	12%	9%	8%	9%	7%	0%	2%	14%	23%	9%	2%	2%	2%	2%	0%	0%	0%	7%	9%	10%	7%	11%	7%	7%	6%	2%	6%	0%	0%	0%	0%	4%	6%	0%	2%	3%	2%
	Mexico	20%	-	6%	-	3%	-	6%	-	5%	-	4%	-	4%	-	2%	-	0%	-	10%	-	14%	-	16%	-	2%	-	2%	-	2%	-	0%	-	2%	-	2%	-	0%	-

U URBAN R RURAL

Least frequently cited barrier in that country — Most frequently cited barrier in that country

Base: Adults aged 18 and above who have used a mobile phone in the last three months but have not used mobile internet in the last three months, despite being aware of mobile internet (excludes mobile users who are not aware of mobile internet). N = from 43 to 127 for urban and from 53 to 254 for rural.
Note: Percentages indicate the proportion of respondents who answered, "This is the most important reason stopping me" to the question, "Which one of those factors would you say is the single most important reason stopping you from using the internet on a mobile phone?" Cells in grey reflect where sample sizes were below 30 and therefore deemed insufficient for analysis.
Source: GSMA Consumer Survey 2022

Further research is needed to better understand the factors affecting smartphone adoption and mobile internet usage in SSA. In particular, there is need to explore the underlying reasons behind consumers'preference for basic feature phones even when they have access to a smartphone or can afford it[7]. In addition, it is important to investigate why some smartphone owners only use the devices to make phone calls and text, but do not use them to access the internet despite being under mobile broadband coverage[8]. To better understand the barriers to smartphone adoption and usage, GSMA is currently conducting a series of in-country research programmes, starting with Kenya, and followed by Zambia, the Democratic Republic of Congo, Rwanda and Nigeria.

In the next subsection, we provide an overview of smartphone adoption in Kenya.

7 Despite improvements, Su-Saharan Africa has the widest usage and coverage gaps worldwide:https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/despite-improvements-sub-saharan-africa-has-the-widest-usage-and-coverage-gapsworldwide/#:-:text=%5B1%5D%20Around%2030%20million%20new,respectively%2C%20see%20Figure%201).

8 Making internet-enabled phones more affordable in low and middle-income countries: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2022/04/Making-internet-enabled-phones-more-affordable-in-low-and-middle-income-countries.pdf

1.1 Smartphone Adoption in Kenya

The government of Kenya has acknowledged low uptake of smartphones 15. The government has also digitised 50% of its services to empower citizens to access a wide range of services[9].

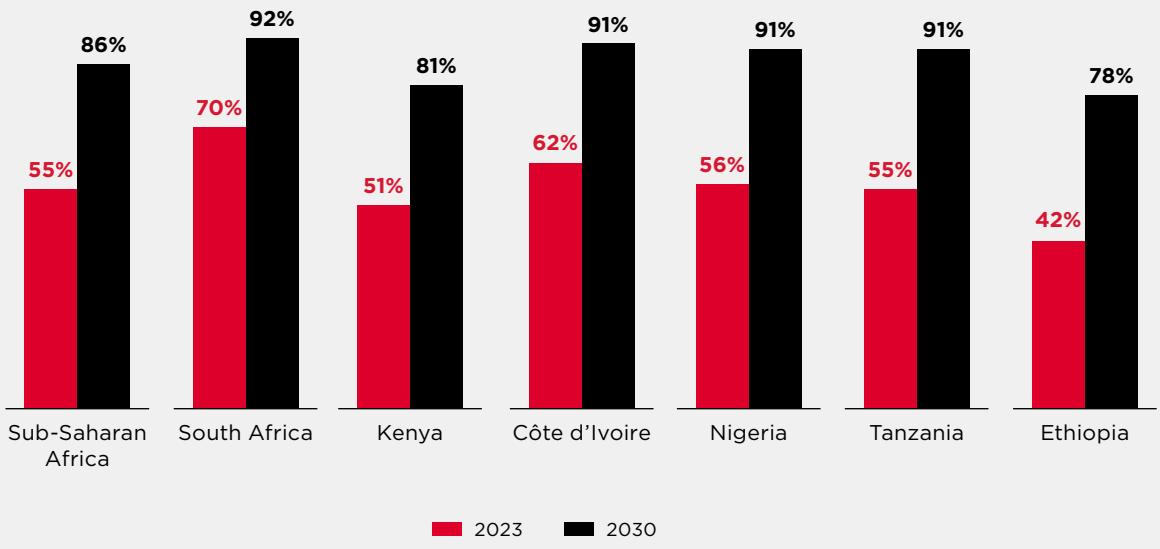
Kenya, with a population of about 53 million people, is one of Africa's leading smartphone markets on the continent[10]. Smartphones are increasingly being perceived as a necessity rather than a luxury in people's everyday lives[11]. A report by the Communications Authority of Kenya (CA) covering July to September 2023, indicated that there were more smartphones than feature phones accessing the mobile networks during this period[12]. Kenya's smartphone penetration (percentage of the population actively using a smartphone) is higher than SSA's average of 44% in 2023[13]. The increasing shift to smartphones indicates that more consumers are opting for the gadget to benefit from the wide array of capabilities, especially internet connectivity.

According to GSMA, smartphone adoption in Kenya is expected to grow to 81% by the year 2030[14].

Figure 4

Comparison of Smartphone adoption in SSA

Percent of connections



9 Almost Half of All Government Services Fully Digitized: https://allafrica.com/stories/202307310270.html

10 Africa's Smartphone Market Records Strong Growth in Q4 2023:https://www.idc.com/getdoc.jsp?containerId=prMETA51938924

11 How smartphone evolved from luxury to a necessity: https://www.businessdailyafrica.com/bd/data-hub/how-smartphone-evolved-from-luxury-to-a-necessity--4349520

12 First Quarter Sector Statisticreportfinancila year 2023/24: https://www.ca.go.ke/sites/default/files/2023-12/Sector%20Statistics%20Report%20Q1%20FY%202023-2024.pdf

13 The mobile Economy 2024: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/wp-content/uploads/2024/02/260224-The-Mobile-Economy-2024.pdf

14 The Mobile Economy Sub-Saharan Africa 2023: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-economy/sub-saharan-africa/

Smartphone adoption has been increasing in Kenya driven by improved network infrastructure, enhanced features of smartphone that are now more affordable, flexible payment plans for smartphones, and favourable technology regulations in the country[15].

The government of Kenya continues to bolster smartphone adoption in the country through investments in infrastructure and provision of skills training to grow the digital economy[16]. Despite the massive investments in digital infrastructure and skills training , the CA, surprisingly, reported declining device adoption in Kenya between January and March 2023, with smartphones recording the steepest decline, accounting for 64% of the total[17]. According to Kenya ICT Action Network (KICTAnet),[18] the slow adoption and usage of smartphones is attributed to:

1. High cost of smartphones due to high taxation and forex escalations
2. Digital illiteracy
3. Lack of mature credit scoring for the Kenyan population to facilitate responsible lending for device financing
4. Gender digital divide due to social and cultural norms

Kenya's Cabinet Secretary for Information and Communication Technology (ICT) and Digital Economy has warned that the slow uptake of smartphones could affect adoption of government and financial services[19]. Thus, there is need to understand factors affecting smartphone adoption and usage in Kenya to inform possible measures by the government to reverse the trend and position the country as a globally competitive digital economy[20].

2.0 Research Objectives

The main objective of this study was to identify the various barriers to smartphone adoption and usage in Kenya. The study sought to comprehend the factors influencing usage patterns and to investigate the relationship between willingness and ability to adopt and use smartphones. This study was guided by the following research questions:

1. Which factors other than the cost of smartphones influence customers' willingness to adopt smartphones?
2. What influences smartphone usage patterns in Kenya?

   i) What is the relationship between willingness and ability to own a smartphone?
3. Which costs in the supply and distribution value chain has the greatest effect on the cost of a smartphone?

   i) Do the overall costs in the supply and distribution chain of imported smartphones justify the need for local assembly plants?

15 Socio Economic Impact of Mobile Broadband in Kenya:https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2017/11/1-Day-1-Socio-Economic-Impact-of-Mobile-Broadband-in-Kenya-Shola-Sanni.pdf

16 Digital economy blueprint: https://www.ict.go.ke/wp-content/uploads/2019/05/Kenya-Digital-Economy-2019.pdf

17 THIRD QUARTER SECTOR STATISTICS REPORT FOR THE FINANCIAL YEAR 2022/2023 (1ST JANUARY – 31ST MARCH 2023)https://www.ca.go.ke/sites/default/files/2023-06/Sector%20Statistics%20Report%20Q3%202022-2023.pdf

18 State of Internet Penetration in Kenya: https://www.kictanet.or.ke/state-of-internet-penetration-in-kenya/

19 Kenya to roll out 1 million locally assembled smartphones in 2 months: https://www.theeastafrican.co.ke/tea/business/kenya-to-roll-out-1m-locally-assembled-smartphones-4238852

20 Kenya kwanza UDA manifesto 2022: https://africacheck.org/sites/default/files/media/documents/2022-08/Kenya%20Kwanza%20UDA%20Manifesto%202022.pdf

3.0
Research Methodology



3.1 Research Data Source

Kenya's 2010 Constitution established the governance to include the National Government and 47 County Governments. The three arms of the National Government are the Executive, the Legislature and the Judiciary. The arms of County Governments are the County Assemblies and County Executive Committees. The 47 County Governments represent the 47 counties that Kenya is divided into, with diverse populations and economic activities.

This study was conducted in nine counties, namely:

1. **Nakuru County:** Nakuru City is the headquarters of Nakuru County. The cosmopolitan city has mixed economic activities, including agriculture, commercial, and manufacturing activities. The city has limited fibre infrastructure coverage in the suburbs, but the county government has installed public WIFI in various stations in the city.
2. **Isiolo/Meru Counties:** Isiolo and Meru counties have great development, income distribution, and population diversity and a thin balance of culture and civilization, serving as a great ground for understanding the intersectionality of culture, affordability and willingness to own a smartphone.
3. **Nairobi/Kiambu/ Muranga counties:** Nairobi, Muranga and Kiambu counties have interesting income distribution dynamics, a diverse population with good network infrastructure, and a wide range of smartphones. These counties serve as a great ground for understanding the relationship between the willingness and the ability to own a smartphone.
4. **Kajiado County:** Kajiado County is a semi-urban region with mixed agricultural and commercial activities. Kajiado has great development, income distribution, population diversity and a thin balance of culture and civilization, serving as a great ground for understanding the intersectionality of culture, affordability and willingness to own a smartphone.
5. **Trans-Nzoia County:** Kitale is the headquarters of Trans-Nzoia County. The town has interesting income distribution dynamics, a diverse population and is a hub for transportation and commercial activities. It is also an affordable place to live, compared to other major towns of its calibre, offering a unique blend of insights into smartphone adoption.
6. **Kilifi County:** Kilifi is a culturally rich county, whose main economic activities are agriculture, tourism and fishing. This county could provide understanding of how cultural practices affect the adoption of smartphones.

The study mainly focused on understanding how social, economic and cultural/ religious factors influence customers' decision to adopt and use smartphones. The research involved interactions with respondents drawn from rural, urban and semi-urban regions for outcomes that are representative of the different dynamics of smartphone adoption in Kenya.



Figure 5

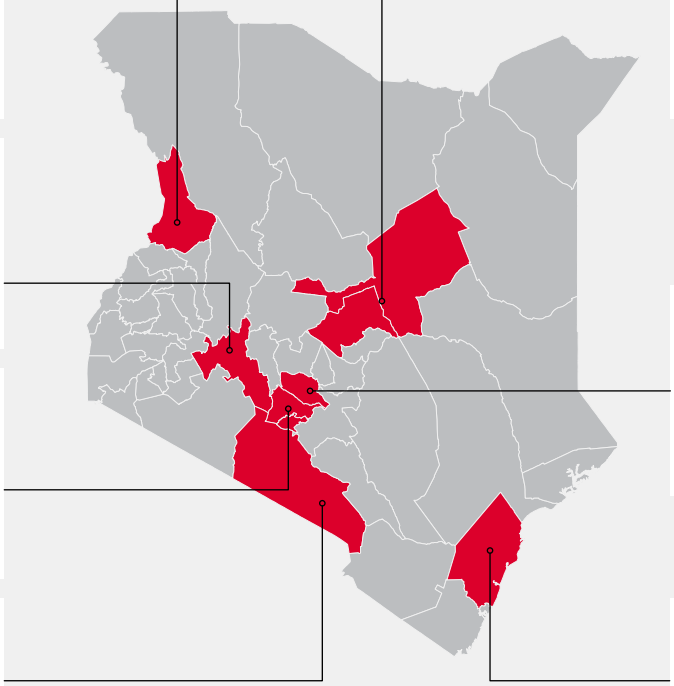
Counties in Kenya where the study was conducted

Trans Nzoia County (Kitale)
The town's income diversity, transit hub, and affordability offer insights into smartphone adoption.

Nakuru County (Metropolitan City)
Diverse city with limited suburban fiber, but county government provides citywide Wi-Fi at the market.

Nairobi & Kiambu Counties
Urban area with vast internet infrastructure.

Kajiado County
Culturally rich town offering insight into smartphone adoption.



Isiolo & Meru Counties
Towns thrive in development, diversity, and cultural balance for studying intersectionality.

Muranga County
Rural town with diverse economic activities.

Kilifi County
Culturally rich town with agriculture, tourism, and fishing, offering insights into smartphone adoption and cultural influences.

3.2 Research Design

This study adopted a mixed-method approach[21] to understand factors driving smartphone adoption in Kenya and potential solutions for improving device uptake. The research was conducted in two phases. In the first phase, in-situ qualitative research was conducted in Nakuru, Kilifi, Isiolo, Meru and Trans-Nzoia counties to understand the rate of smartphone adoption and factors hindering customers from owning or using a smartphone. A total of 60 in-depth interviews (IDIs), 8 Focus Group Discussions (FGDs) with six participants in each group, and 11 Key Informant Interviews (KIIs) were also conducted.

Using a semi-structured conversation guide, data collection procedures from the IDIs and the FGDs targeted Kenyans who:

1. Had smartphones (they use to access the internet or not)
2. Had feature phones with a web browser, camera, radio receiver and a set of pre-installed applications
3. Did not have phones but use a friend's or relative's to access the internet or make calls.

The qualitative data was synthesised and analysed it into tags that were developed into research themes. A total of 11 interviews were conducted with tier one, two, and three phone dealerships and MNO representatives, to understand customers' considerations before buying a smartphone.

The second phase of the research involved collection of quantitative data through surveys to validate the qualitative findings identified in the first phase. A quantitative survey was carried out amongst 150 respondents from different parts of Kenya. Of the 150 survey respondents, 50% were in-person conducted in Muranga, Nakuru, Kajiado, Kiambu, Trans-Nzoia and Nairobi counties to ensure the data also included feedback from individuals who were without smartphones, had low literacy levels, or were older and could not interact with the online survey.

The collected data was statistically analysed using Excel and R programming software. The qualitative and quantitative findings were then triangulated to highlight the main factors that affect smartphone adoption in Kenya and possible strategies to improve this. The research findings are presented in the next section.

21 The research guide documents can be accessed at the appendix

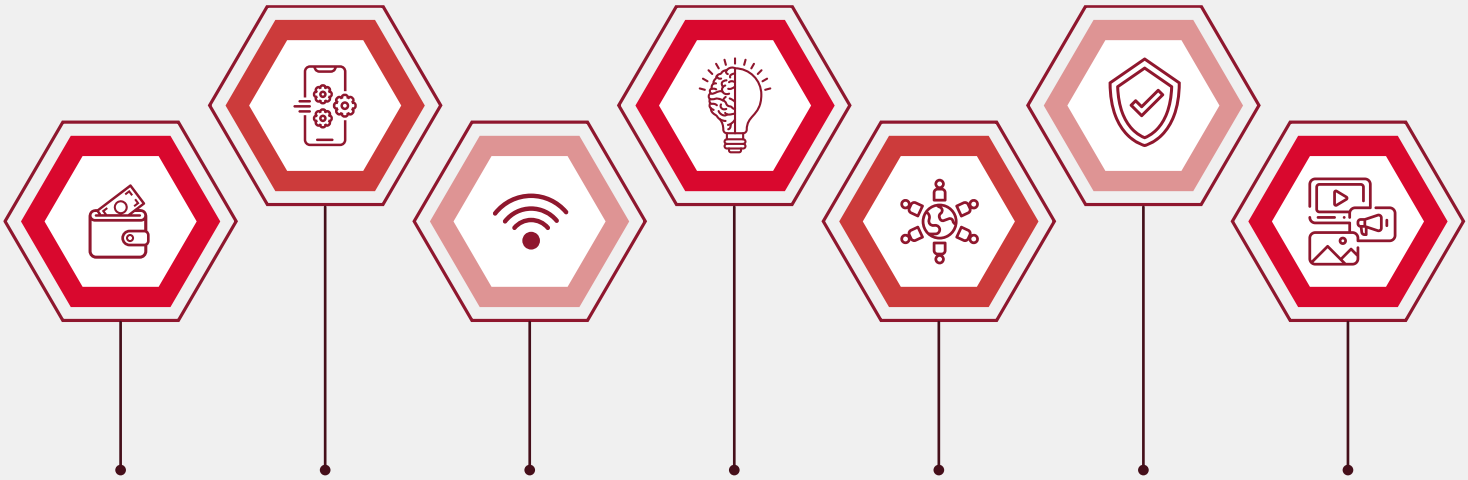
4.0
Factors Affecting Smartphone Adoption



The study identified two main factors that drive smartphone adoption: affordability of devices and individuals' willingness to allocate their financial resources to smartphones.

Figure 6

Factors Affecting Smartphone Adoption in Kenya



Smartphone Cost

- Buy-Now-Pay-Later (BNPL) model is prevalent
- Demand for refurbished phone with 6-12 months warranty
- No warranty, no refund policy, no insurance

Smartphone features

Demand for smartphones with:

- Long battery life
- High storage capacity
- High operating speed of at least 1.3 GHz
- Durable (with screen protector and phone cover)
- Dual sim support

Poor internet connection

Limited internet connectivity:

- At certain times of the day
- In most rural areas
- While using some telcom services

High Internet Cost

- Internet data bundles are expensive
- Data bundles are not tailored to customers' needs
- Demand to do away with the internet bundles' expiry period

Negative perceptions

- Smartphone is bad: herd mentality following strong community influencers
- Smartphone is not for us, we like simple phones
- Voice call/SMS is enough

Cultural Aspects

- Illiterate individuals struggle to understand the language used
- Localise content i.e pre-install app that match the cultural and comercial needs of customers in different regions

Content concerns

- Smartphone has ungodly content
- Limited awareness of search engines to find relevant content e.g., digital religious books
- Spousal control

1. Affordability: The cost of owning a smartphone in Kenya is high due to the high levels of taxation. The main taxes paid by mobile phone buyers in Kenya are:

- 16% VAT levied on handsets
- 10% Excise Duty on handsets
- 25% EAC import duty
- 4% Railway Development Fee (1.5%) & Import Declaration Fee (2.5%)
- 12% Forex impact and shipping costs.

To facilitate buying of handsets, MNOs and Financial Service Providers (FSPs) offer device financing services that sometimes do not cater for the needs of all customers. In addition, the cost of data bundles is high and the offered packages run out fast or expire before customers can fully utilise them, thus making them expensive.

2. Customer's willingness to buy a smartphone: Some customers' intention to purchase a smartphone is affected by their failure to because they do not recognise the value of a smartphone over a feature phone. Although customers can afford a smartphone, it is hypothesised that several factors beyond financial capabilities influence their inclination to purchase it. Despite being able to afford such devices, some customers still need to be convinced to transition from feature phones to smartphones. This reluctance is attributed to a combination of factors, including religious and cultural attitudes as smartphones are considered intrusive and unnecessary; perceived complexity of the devices due to limited digital literacy; negative perceptions towards usage of smartphones that could stem from concerns over privacy and social impact and lack of network coverage in certain areas that renders smartphones less functional and reduces their perceived value. This is detailed in the sections below.

4.1 Lack of Affordability

The study's findings indicate that the high costs of owning, maintaining and repairing smartphones and accessing the internet are major hindrances to adoption in Kenya. The next subsection expounds on emerging cost factors and provides recommendations gleaned from respondents' suggestions.

Figure 7

Factors influencing smartphone affordability

FACTORS DRIVING AFFORDABILITY	SOLUTIONS SUGGESTED	% OF SAMPLE INTERVIEWED
Limited smartphone insurance	Establish phone insurance services	50%
High internet cost	Simplify tariff structures Do away with the data bundle expiry period	47.7%
High smartphone cost	Establish a market for refurbished smartphones with 6-12 months warranty	45.5%
BNPL option	Enhance the range of smartphones offered through BNPL services	36.8%
High Smartphone Cost	Implement a payment plan over a period of time with no interest rate	23.6%

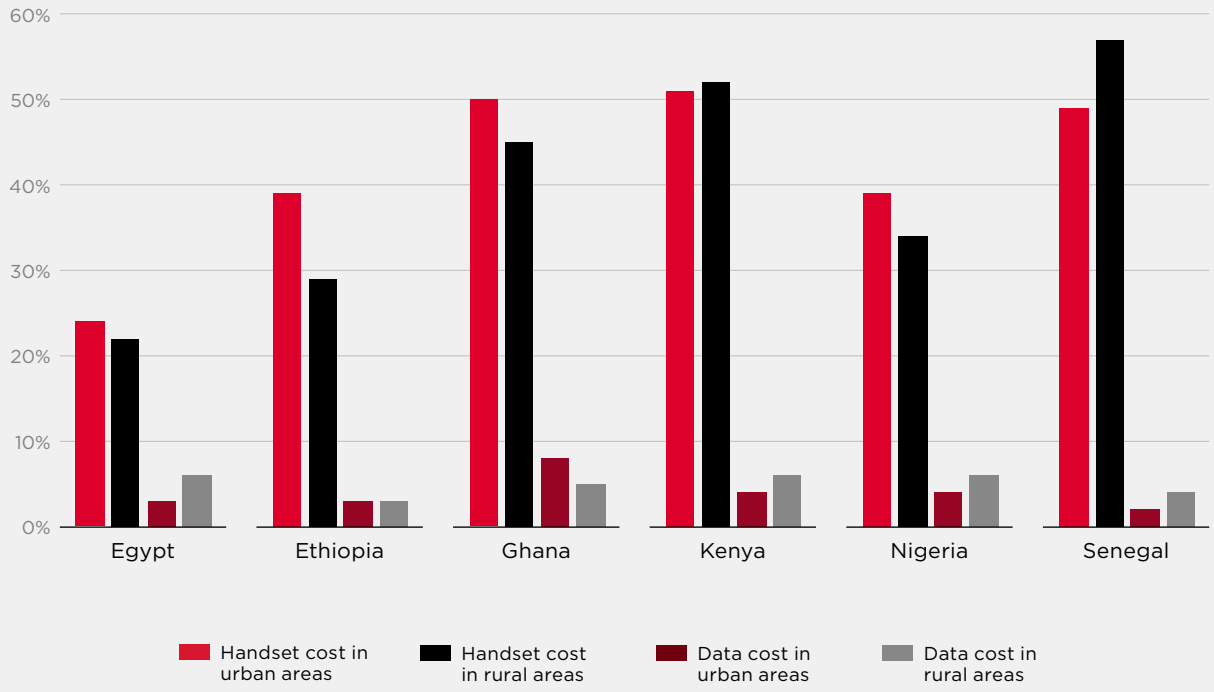
4.1.1 High Smartphone Cost

Over the years, smartphone features and functionality have improved, granting users multiple functionalities for various activities, such as learning, content creation, e-commerce, among others. Increasingly, customers are adopting smartphones for general use in their everyday lives, preferring high-performing gadgets to budget smartphones[22].

According to a consumer survey conducted in 2023, handset affordability is the highest barrier to broadband adoption. Handset affordability is defined as the ratio between the price of a handset and a person's income[23].

Figure 8

Handset and Data Cost in SSA



Despite availability of low-cost internet enabled devices in the market, they are not affordable since their cost represents an excessive share of the customers' monthly income. In addition, the cost of repairing a broken device is high because the spare parts are expensive[24]. According to our 2024 consumer survey, on average, an entry-level, internet-enabled device costs 95% of the monthly incomes of the poorest 20% in SSA.

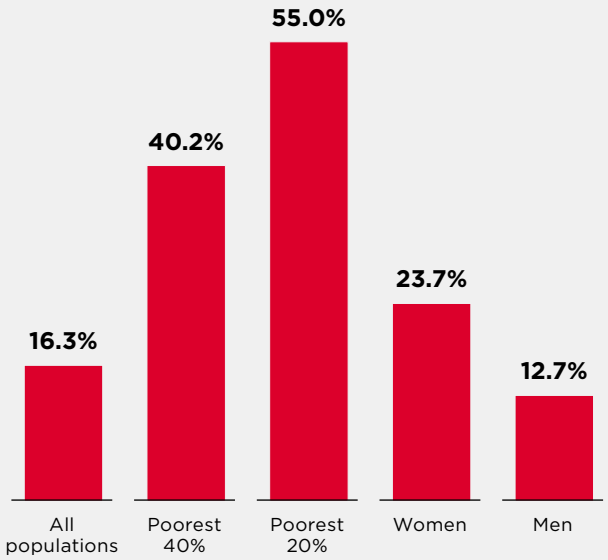
22 How Smartphones Are Helping Kenyans Earn a Living: https://theexchange.africa/tech-business/how-smartphones-are-helping-kenyans-earn-a-living/

23 The State of Mobile Internet Connectivity 2023: https://www.gsma.com/r/wp-content/uploads/2023/10/The-State-of-Mobile-Internet-Connectivity-Report-2023.pdf?utm_source=website&utm_medium=button&utm_campaign=somic23

24 Smartphone boom in Kenya creates thriving phone repair business: http://www.xinhuanet.com/english/201902/22/c_137842824.htm

Figure 9

Median device affordability by segment, 2022 (as a % of monthly GDP per capita)



In this research, 35% of respondents attributed the high rate of unemployment and inflation in the country, to the inability to afford a smartphone.

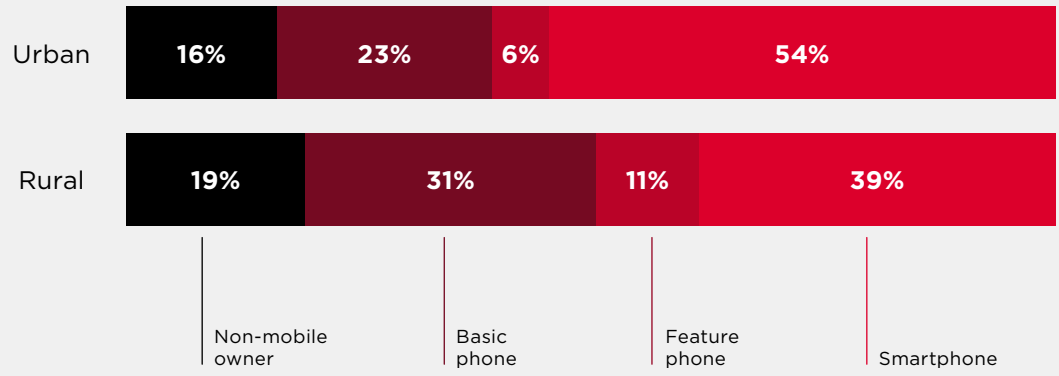
> "Many people do not have jobs, so they cannot afford a smartphone"
> **– 43-year-old woman, Kajiado.**

> "I think it's more of an economic issue. People would rather fulfil the basic needs and responsibilities before getting a smartphone"
> **- 22-year-old woman, Kajiado.**

Handset affordability is prevalent in rural areas where most people have low incomes and practise subsistence farming. In addition, it was identified that the cost of smartphones in rural areas is higher than in urban areas due to high distribution costs, making them less affordable. People in rural areas are 28% less likely than those in urban areas to own a smartphone23.

Figure 10

Smartphone ownership in rural and urban Kenya



To boost affordability in low-income settings, most phone vendors often specialise in selling low-end devices to make sales.

> "I only sell Tecno and Neon brands because they are affordable. If a customer wants an expensive phone such as Camon, Samsung, etc., they must order in advance before I deliver it to them. I cannot stock these phones because most people cannot afford them here"
>
> **- Phone vendor, Nakuru rural area.**

However, 61% of the respondents mentioned that the low-end phones have limited functionalities and features, thus inhibiting customers' access to internet content[25]. Instead, 5% of respondents mentioned that they use these phones mainly for making calls and messaging, and occassionally use Lite applications to access online content.

> "Customers who buy Neon Ray phones mainly use it to call and text. They want to show their friends they are using touch screen"
>
> **- 30-year-old smartphone salesperson Nakuru.**

Most of the budget smartphones in Kenya are 2G and 3G enabled. Despite the extensive coverage of 4G network in Kenya, more than 6.5% of the mobile subscribers still use 2G and 3G enabled smartphones because they are affordable[2627]. However, the government and mobile operators in Kenya are accelerating plans to shut down the legacy networks to encourage customers to migrate to 4G and 5G networks. This transition will allow customers to access high-speed internet, but could be expensive in the long run because customers will need to abandon their current smartphones to adopt those that are 4G and 5G enabled.

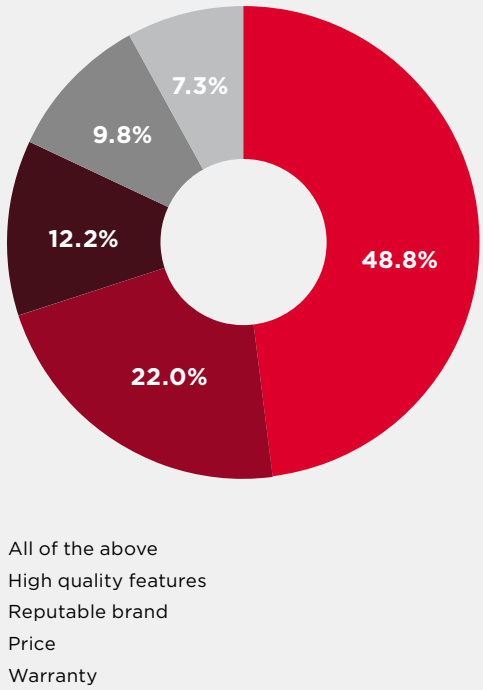
Therefore, it is evident that introducing low-end smartphones has not completely boosted Kenya's low smartphone uptake. Instead, this study evidences a growing market for second-hand phones in Kenya. 60% of the survey respondents indicated preference for second-hand phones, enabling them to access their preferred phone at a lower cost, compared to acquiring a new phone with similar specifications.

Regarding the factors they consider when buying a second-hand phone, 48.8% of respondents mentioned that they regard a phone to be worth their money if it:

1. Is from a reputable local or international brand
2. Has 6-12 months warranty
3. Has high-quality features such as 6000mAh battery life, 16MP rear camera and 8MP front camera, 2GB RAM and 32GB storage good camera, among others.
4. Is affordable

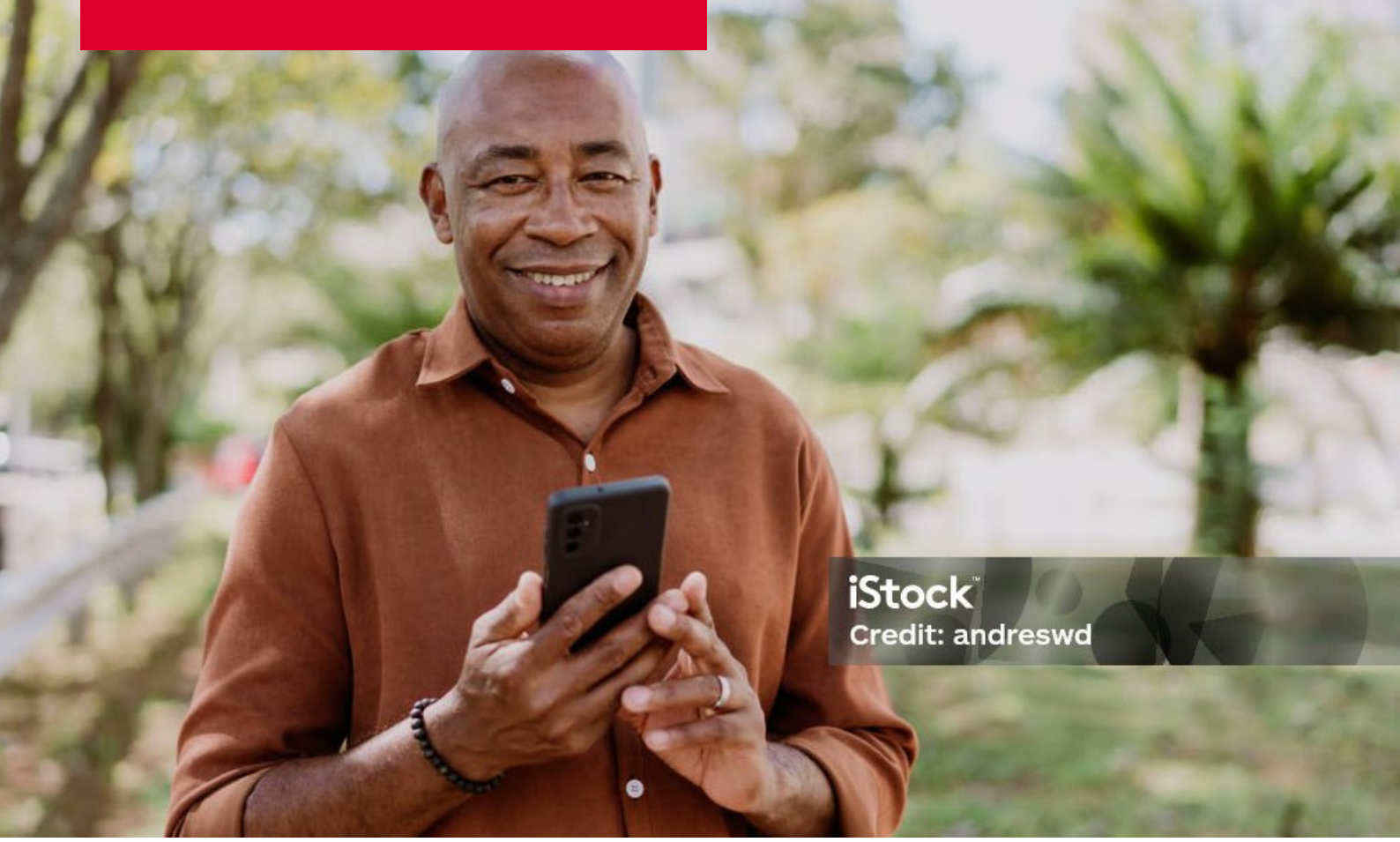
Figure 11

Factors that customers consider when buying a second-hand phone



From respondents' feedback, we identified that there were few authentic companies in Kenya such as Badili and Carlcare that sell refurbished phones. Respondents suggested that the establishment of additional second-hand stores in Kenya could improve smartphone adoption in the country.

25 Safaricom Neon Ray 2 Review: 4G Connectivity at KES 5000 https://techweez.com/2021/09/22/safaricom-neon-ray-2-review-kenya/
26 Communication Authority of Kenya: https://www.ca.go.ke/sites/default/files/2023-12/Sector%20Statistics%20Report%20Q1%20FY%202023-2024.pdf
27 Safaricom Network and Infrastructure: https://www.safaricom.co.ke/annualreport_2022/our-network-and-infrastructure/



4.1.2 Phone Insurance Services

30% of the respondents mentioned that they avoid buying smartphones for fear of losing them through theft or damaging them. With the cost of replacing or repairing a smartphone high, they prefer a feature phone which is cheaper.

> "The reason I don't have a smartphone is because the one I had got stolen. It was snatched as I was walking and talking on it. So, it has been hard for me to recover from that shock till now, because it was a costly phone."-
>
> **- 30-year-old unemployed man, Isiolo.**

79% of respondents did not have phone insurance. Instead, they mentioned, they buy a phone with at least a one-year warranty that only covers software issues. The warranty does not cover broken screens. Instead, customers are required to pay for phone repairs in case it is broken.

> "You can't climb up to the ceiling with a smartphone, if it falls, that's it. The cost of repairing it is so high and that's why I prefer a feature phone. It is durable"
>
> **- 43-year-old Electrician, Nakuru.**

These additional costs of repairing or replacing a smartphone deter customers from owning or using the device. In response to whether they were willing to pay for phone insurance, 50% of respondents confirmed that they would take the cover. Respondents recommended collaboration between phone dealers, insurance companies and MNOs to tailor insurance covers that cushion customers from the high cost of buying or repairing a broken device.

4.1.3 High Data Cost

According to 2023 statistics from the International Telecommunication Union (ITU) statistics in 2023[28], on average, a data-only mobile broadband package costs USD 2.92 for 2GB of data in Kenya as compared to USD 4.98 in the larger Africa region and USD 7.05 globally. However, the cost of the same mobile broadband package is cheaper in Ghana (USD 2.66), Sri Lanka (USD 0.83) and Bangladesh (USD2.04), economies that are structurally similar in development to Kenya. Although data analysis by Kepios indicated that internet users in Kenya have increased by 2% between 2023 and 2024[29], research by KICTANet highlights that the high cost of data bundles is a deterrence to smartphone adoption and usage[30].

In line with KICTANet data, 48% of the respondents mentioned the high internet costs in Kenya as a hindrance to accessing online services and content.

"The internet cost in Kenya is high,"
- Salonist and content creator, Nakuru.

"Why should data bundles expire when the allocated time elapses? They should carry it forward"
- Content creator Kilifi.

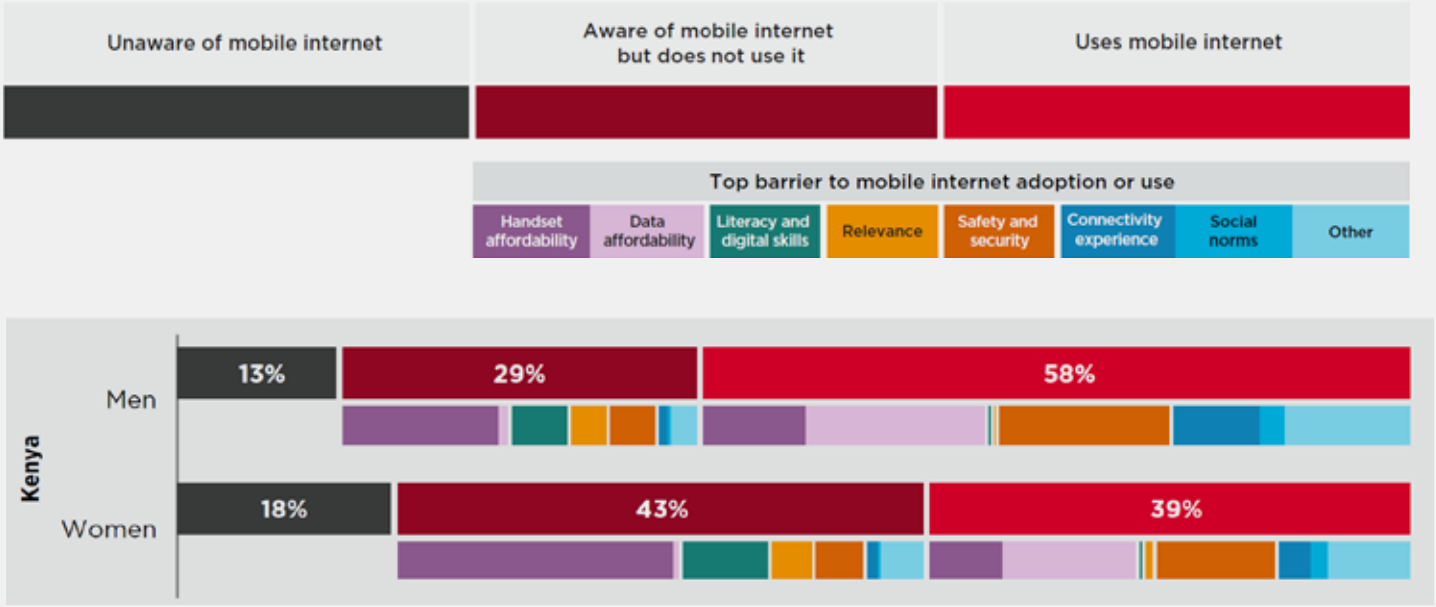
"I can buy bundles for 20 shillings, but they don't last long. In a day, I can even spend 500 shillings, which is so expensive"
- 26-year-old cosmetologist, Isiolo.

"I rarely buy data bundles. I mainly use Wi-Fi, which is slower than data bundles; but since it is free, I am willing to wait"-
- 25-year-old night guard, Kilifi.

Data affordability is the second top barrier that hinders customers from adopting mobile internet use in Kenya.[23] Data affordability is the ratio between the price of data and a person's income.

Figure 12

Barriers to Mobile Internet Adoption in Kenya



28 ICT price baskets: https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx

29 Digital 2024: Kenya — DataReportal – Global Digital Insights:https://datareportal.com/reports/digital-2024-kenya#:~:text=Internet%20use%20in%20Kenya%20in%202024&text=Kenya's%20internet%20penetration%20rate%20stood,January%202023%20and%20January%202024.

30 State of Internet Penetration in Kenya: https://www.kictanet.or.ke/state-of-internet-penetration-in-kenya/

According to our 2023 State of Mobile Internet Connectivity Report, 62% of customers (29% of surveyed men and 43% of surveyed women) are aware of mobile internet but due to high data costs, are unable to access.

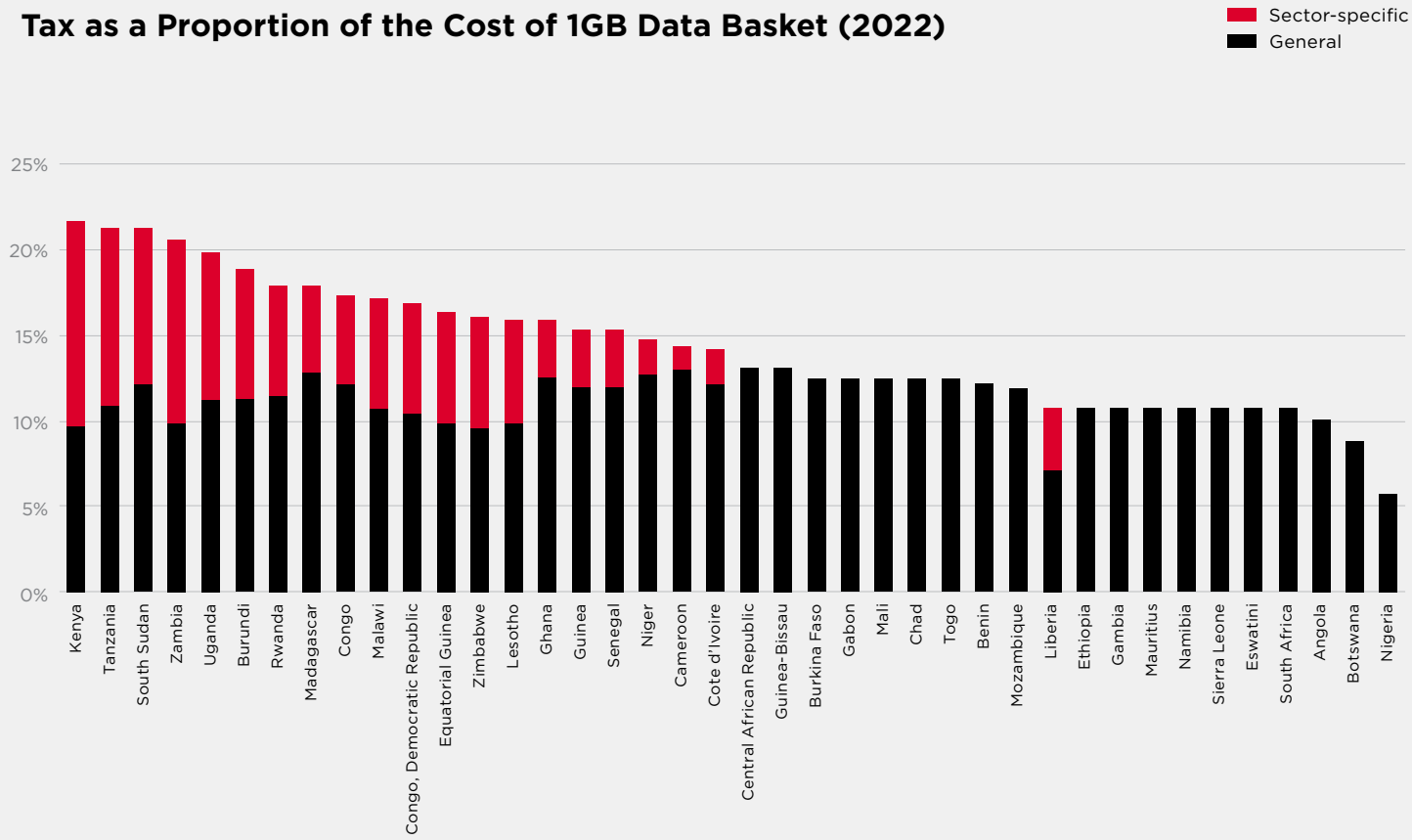
High rates of taxation have contributed significantly to the high internet cost in Kenya. The main taxes paid by mobile consumers in Kenya are:

- 16% VAT levied on mobile services (inclusive of excise taxes), handsets and SIM cards (mobile money is exempt)
- 15% excise duty on the value of mobile services (including voice, SMS and data)
- 12% excise duty on mobile money transaction fees
- KSh50.00 excise duty on imported ready-to-use SIM cards.

The cumulative effect of this tax structure subjects the telecoms industry in Kenya to the highest overall tax burden in the region, as in Figure 13 below.

Figure 13

Tax as a Proportion of the Cost of 1GB Data Basket (2022)



Source: GSMA analysis and Tarifica data.

Excise duty levied in Kenya is among the highest rates in Sub-Saharan Africa, increasing from 10% to 15% in 2018 and from 15% to 20% in 2021. This was reduced to 15% following a sharp decline in mobile service usage. Following the increased excise duty, the below was observed in Kenya.

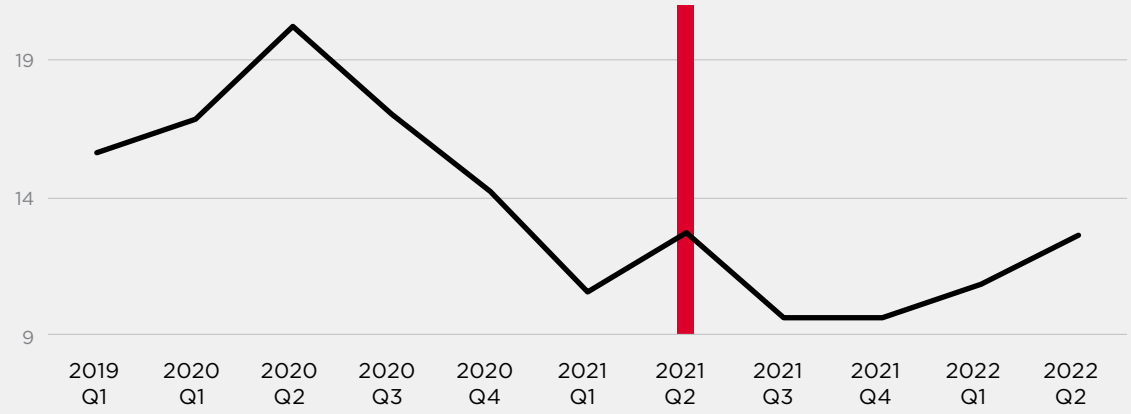
a) SMS usage declined for two quarters before picking up in 2022 Q1.

By contrast, the use of voice increased per subscriber initially – possibly, because the price of internet bundles remained unchanged – but then declined.

Figure 14

Domestic SMS traffic

Domestic SMS traffic (billions of messages)

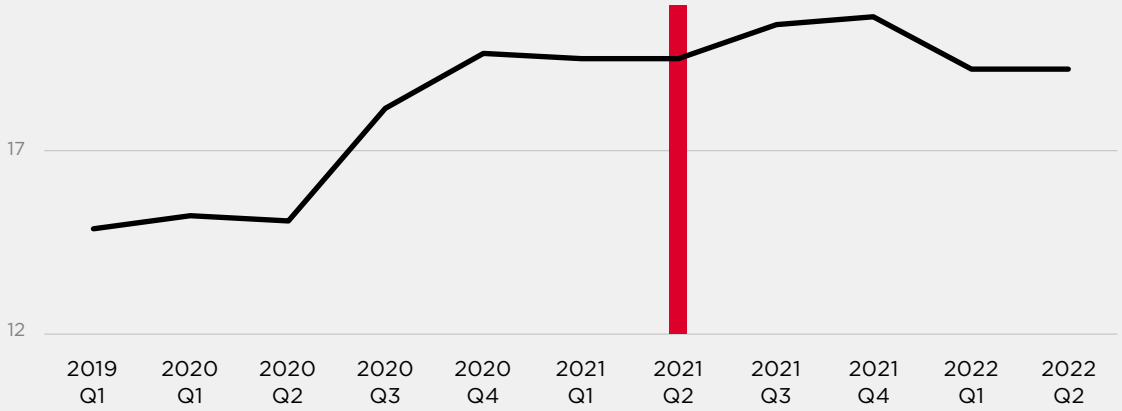


Source: Kenya Communications Authority.

Figure 15

Domestic voice traffic

Domestic voice traffic (billions of minutes)



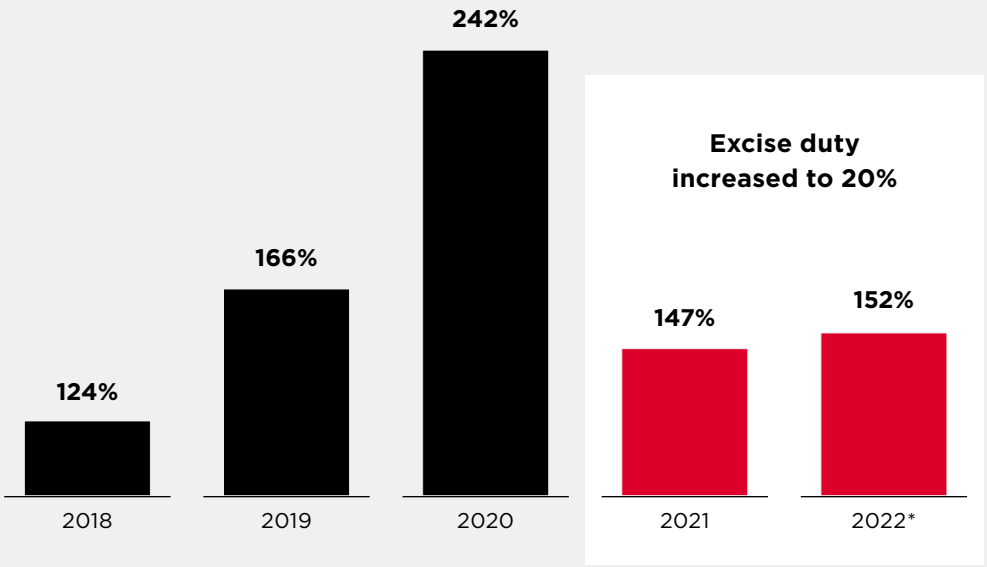
Source: Kenya Communications Authority.

b) Mobile data traffic growth slowed down from 2021.

As demonstrated in Figure 16 below, data traffic has continued to increase due to higher demand for mobile broadband services. There was an even higher increase in 2020 occasioned by changes in consumer behaviours such as working from home, e-commerce, and schooling from home due to adjustments to cope with various interventions to curb the spread of COVID-19. The pandemic demonstrated just how critical digital penetration is, with regard to business continuity, as it enabled many essential services to proceed with minimum interruption during lockdowns. However, growth in data consumption slowed down in 2021 following an increase in excise duty, and thus in 2022, the year-on-year growth did not significantly increase.

Figure 16

Mobile Data Traffic Growth Trend between 2018 and 2021



c) Government excise revenues from airtime fell in 2021

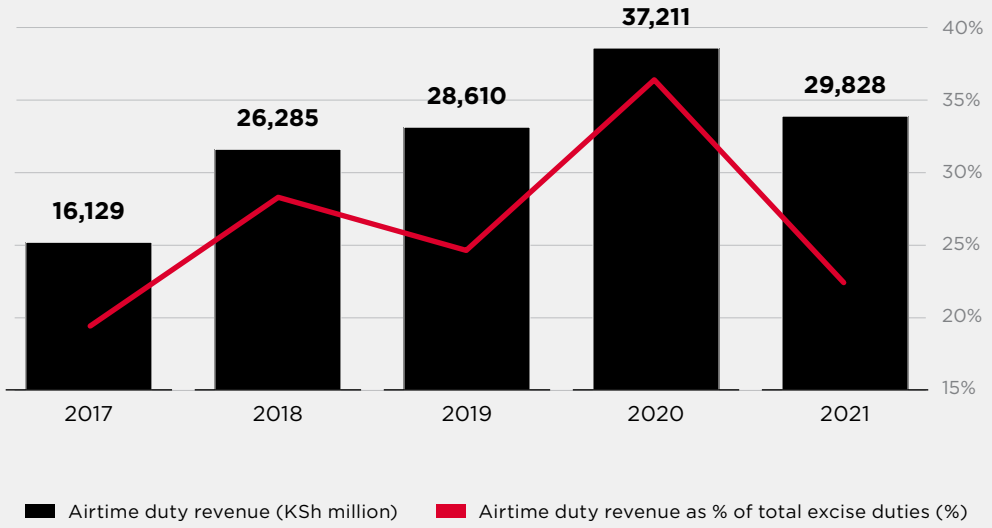
The reduction in usage for certain segments led to a 20% reduction in revenues collected from airtime tax in 2021. Revenues levied fell from KSh37.2 billion in 2020 to KSh29.8 billion in 2021; as a proportion of all excise duties, the mobile industry's contribution fell from 36% in 2020 to 23% in 2021. This is similar to the revenue raised in 2019.

The Government of Kenya intended to restore the duty to 20% through the 2024 Finance Bill, which could severely impact mobile services' affordability, as witnessed in 2022.

In this study, respondents were asked how mobile internet services could be improved and made more affordable in Kenya. 50% of the respondents suggested that MNOs tailor internet bundles that resonate with the customer's daily income to boost smartphone adoption and internet access. In addition, 47% of the respondents asked that the MNOs do away with expiry periods on purchased data bundles. This is a major deterrent for internet access and usage because customers sometimes do not fully utilise the resources within the period provided.

Figure 17

Excise Revenue Levied on Airtime



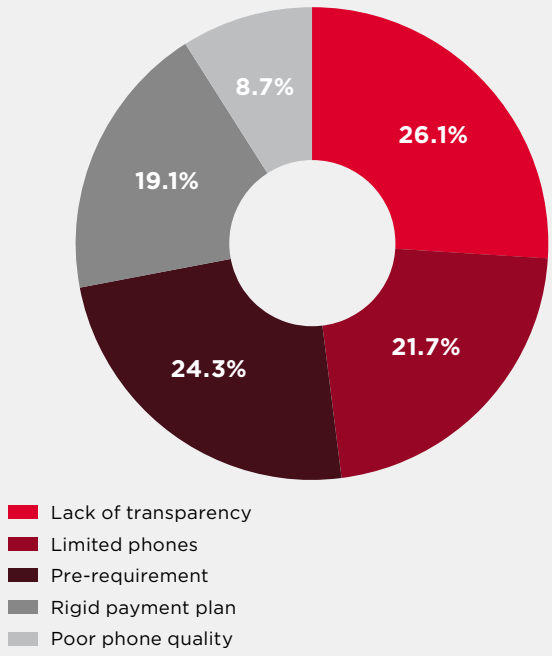
4.1.4 Smartphone Financial Services

Kenya's MNOs and FSPs have tailored several financial solutions that aim to empower customers to own smartphones on credit[31,32]. To qualify for these services, prospective customers undergo an online verification process[23]. Qualifying customers can own a phone after making a down-payment as little as USD5, followed by daily instalments of USD0.15 - USD1 over a period of 18-36 months to clear the balance[23,33].

This research found that although 70% of the respondents consider Buy Now Pay Later (BNPL) services expensive due to the accrued interest over time, 36% of the respondents acquired their smartphones through this payment option. However, the payment plan faces a myriad of issues as illustrated below that deter prospective customers.

Figure 18

BNPL challenges affecting customers' decision to own a smartphone



- **Lack of transparency:** 26% of respondents who confirmed acquiring smartphones through the BNPL plan highlighted that the payment plan is not transparent. Hidden costs are not revealed to customers upfront when they sign a payment agreement with the FSPs, resulting in exorbitant smartphone costs.

> "I paid KSh3500 as down-payment, but this cost was not included in the cost of the phone. I lost this amount since I thought it was part of the phone's total cost"
> **- Salonist, Nakuru**

- **Limited variety of phones offered by FSPs:** 37% of respondents mentioned that the available FSPs only offer a small range of smartphones, thus limiting them from owning their preferred brands. For instance, M-Kopa offers only Samsung and Nokia phones[25], Watu offers only Samsung[34], Lipa Mdogo Mdogo offers Neon, Tecno and Itel products[23] and Easybuy offers Tecno, Infinix, Oppo, Samsung, Nokia, Huawei, iPhone and Itel phones[35].

  50% of the dealers mentioned that Easybuy and M-Kopa services were popular because they offer a wide range of phones. 36.8% of respondents during IDIs and KIIs suggested that FSPs widen the range of smartphones they offer by conducting market research to identify customers' phone preferences.

31 Lipa mdogo mdogo : https://www.safaricom.co.ke/personal/value-added-services/other-services/lipa-mdogo-mdogo#:-:text=This%20service%20makes%20it%20possible,a%202G%20or%203G%20smartphone

32 Vodafone's Read on a mission to get everyone a smartphone: https://www.telcotitans.com/vodafonewatch/vodafones-read-on-a-mission-to-get-everyone-a-smartphone/5522.article

33 Mkopa smartphone financial services: https://loanphones.co.ke/pricelist/mkopa/#:-:text=To%20get%20the%20Samsung%20Galaxy,a%20duration%20of%20365%20days.

34 Watu Simu finance: https://watuafrica.com/watu-simu/#:~:text=Watu%20Simu%20provides%20affordable%20and,smartphones%20to%20the%20Kenyan%20market.

35 Easybuy Phones: https://web.ke.easybuy.loans/#/

- **Pre-requirement documents:** 38% of the respondents mentioned that FSPs do not clearly outline their requirements. Thus, customers are disqualified from accessing these services without clear reasons.

> "I was disqualified from accessing the services without being given a reason"
> **– Motorcycle taxi rider, Kitale**

> "I never received any feedback from them. They should have mentioned why I was disqualified"
> **- 20-year-old man, Kakamega**

Customers mentioned the importance of FSPs providing guidance to customers throughout the application process, highlighting the required conditions and documents to ease uptake of these services. 10% of customers engaged during the IDIs suggested that requirements should be clearly mentioned on FSPs' websites or pamphlets in the phone dealers. In addition, they recommended that the information be in English and Swahili for customers to understand the BNPL requirements.

- **Rigid payment plan:** 19% of IDIs respondents claimed they could not raise the deposit set by the FSPs. The respondents stated that available payment plans were rigid and did not allow them to set a payment plan based on their earnings.

> "I could not raise the KSh500 deposit they asked me to pay. That's a lot of money, you know. I am a hustler"
> **- Menial worker, Kitale**

> "They should offer a variety of payment options like daily, weekly, bi-weekly, or bi-monthly. We businesspeople sometimes get money after two weeks and may not be able to pay daily. They should not select a payment plan for a customer"
> **- Business woman, Nakuru**

> "I can't take up the plan because I am not guaranteed that I will have money to pay the instalments. They should have flexible payment plans"
> **- Business person, Isiolo**

12% of respondents, who have previously taken up a plan said they could not take up another plan for fear of being blocked from using their phones when they failed to pay. Based on their previous experiences, inaccessibility of the phone when it is blocked hinders them from accessing financial assistance from friends or other FSPs, making it challenging for them to settle the payment. In addition, elderly customers highlighted the struggle to memorise the passwords required to unlock phones once switched on, thus making it impossible to use it.

19% of respondents proposed a flexible payment plan that would allow customers to choose when they could pay, i.e. weekly, bi-weekly, or bi-monthly payment plans instead of the daily and monthly options that are currently available.

- **Phone durability:** 8.7% of the respondents claimed that phones bought through BNPL are not resilient, thus making them non-functional by the time they finished paying off the plan. This made the customers take up a new financial plan immediately after paying for the previous smartphone. Respondents suggested that quality phones be provided through this model, for customers to enjoy their phones.

> "When the phone is broken, they keep the phone and bring you a new one that you have to start paying for afresh"
> **- BNPL customer Kitale**



4.2 Customers' Behaviour Towards Smartphone Adoption

In Kenya, thousands of people use smartphones to earn a living[36]. In this research, 82% of the respondents mentioned that their decision to own and use a smartphone is influenced by the value they expect to gain from it. Customers are willing to buy a smartphone if the device will boost their business, enabling them to create content, improve their learning experiences, and access financial services. Respondent customers said they tend to use feature phones to operate their businesses. This is in line with a recent study conducted in Kenya and Uganda that found that most traders prefer basic feature phones for their business activities despite being able to own a smartphone[37].

The study also found that customers' cultural and religious beliefs affect smartphone adoption and usage. Previous studies in the African context have shown that culture and religious beliefs affect smartphone adoption and usage[38,39]. These studies advocate for the Social Shaping for Technology approach to understand how people perceive and use technology, such as smartphones[40].

The Social Shaping for Technology concept argues that people and their social arrangement affect how they use technology[35]. This study focuses on understanding the intersection between cultural or religious values and mobile phone adoption in Kenya to learn how intention to purchase a smartphone could be positively influenced to benefit customers, without eroding or demeaning their beliefs.

From the various respondents, various factors were identified that affect customers' willingness to own a smartphone despite being capable of owning the device. These factors are illustrated in Figure 19 and discussed below:

36 How Smartphones Are Helping Kenyans Earn a Living: https://theexchange.africa/tech-business/how-smartphones-are-helping-kenyans-earn-a-living/#:-:text=Without%20a%20doubt%2C%20smartphones%20are,directly%20in%20the%20mobile%20industry.

37 Smartphone adoption among traders in Kenya and Uganda: https://reliefweb.int/report/kenya/smartphone-adoption-among-traders-kenya-and-uganda-march-2022#:-:text=The%20data%20highlights%20that%20a,found%20to%20be%20relatively%20low.

38 Cultural Factors in a Mobile Phone Adoption and Usage Model: https://www.researchgate.net/publication/30511248_Cultural_Factors_in_a_Mobile_Phone_Adoption_and_Usage_Model

39 The Contribution of Socio-Cultural Aspects of Smartphone Applications to Smart City Creation. Poland–Turkey Comparison: https://www.mdpi.com/1996-1073/14/10/2821#:-:text=Culture%20and%20cultural%20conditions%20belong,or%20contact%20the%20outside%20world.

40 Explaining African-American Cell Phone Usage through the Social Shaping of Technology Approach: DOI 10.1007/s12111-015-9317-x

Figure 19

Factors driving customers willingness to own a smartphone

FACTORS DRIVING WILLINGNESS	SOLUTIONS SUGGESTED	% OF SAMPLE INTERVIEWED
False marketing	Improve transparency in BNPL services	69.1%
Smartphone features	Manufacture a durable smartphone with at least 6000mAH battery life, Quad-core 1.3 GHz processor, 2GB RAM and 32GB storage, dual sim and good camera (rear 16MP and front camera 8MP)	60%
Smartphone capabilities	Provide smartphone with dual sim and 4G/5G capabilities	50%
Cultural and religious beliefs	Zero rate downloading of the Bible/Quran/etc	35%
Perceptions about the smartphone	Digital skills ambassadors to download resources that customers need	34.6%
Smartphone content	Localise online content	34.6%
Network coverage	Improve network coverage in rural and urban areas	31.8%

4.2.1 False Marketing about Smartphones

In Kenya, there are several FSPs that support customers in owning smartphones and paying on instalment basis.[23,25,26,27] However, the study found that some FSPs often use false marketing approaches that diminish customers' trust in such initiatives. For instance, 17.2% of the respondents said they received false information from the providers to lure them into buying a smartphone that did not meet the specifications shared at the point of sale. Below are some of the comments made by respondents regarding the false information given to customers:

> "I bought the smartphone thinking it was legit, only to realise it cannot access the internet. Even if I purchased data bundles or connected to Wi-Fi, it completely refused to access the internet. It can make calls and messages though. On the internet part, I was duped"
> **- Barber, Isiolo.**

> "The phone had X and Facebook icons, and the seller told me I could access the apps. Unfortunately, the icons are not clickable"
> **- Teacher, Nakuru.**

69% of the respondents expressed unwillingness to take up the BNPL service. Instead, they preferred alternative purchasing options such as buying on loan directly from the dealers (where the shops keep the phones until the customer's completes payment), buying second-hand phones, or resorting to feature phones until they save enough for a smartphone.

> "I am using a feature phone, but I am planning on going back to a smartphone once I have accumulated enough money"
> **- Business person, Kitale.**

> "For customers who decide not to take up the BNPL service, we agree with them to pay for the phone for a certain period. We keep the phone until they finish paying for it"
> **- Phone dealer, Limuru.**

Customers mentioned that phone sellers should be transparent and provide the correct information. This will improve customers' trust in the BNPL service, which will, in turn, boost the business in Kenya.



4.2.2 Smartphone Features and Capabilities

In Kenya, there is a high market for budget smartphone brands such as Tecno, Infinix, Itel, among others. 60% of the respondents highlighted that although these phones are affordable, some brands such as Neon and the Tecno have limited features and capabilities that causes them to hold back from buying these models. For instance, Neon Ray phones have 2000mAh battery life, 5MP rear camera with LED flash, 2MP front camera, 1GB RAM, 8GB internal storage, 4G-enabled and dual SIM capabilities. To further understand the features that customers consider while buying smartphones, the study identified these features in order of ranking:

Table 1

Heat map showing specifications considered by customers when buying a smartphone

	1st choice	2nd Choice	3rd Choice	4th Choice	5th Choice	6th Choice
Battery life	38%	12%	14%	13%	1%	2%
Camera quality	17%	16%	15%	17%	9%	4%
Storage capacity	5%	30%	27%	14%	5%	0%
Durability	28%	13%	8%	12%	11%	5%
Dual SIM support	7%	12%	10%	10%	24%	18%
Operating system	23%	13%	8%	9%	10%	9%
Processing speed	13%	7%	7%	13%	21%	19%
Warranty	5%	30%	20%	12%	5%	7%
Brand	19%	13%	12%	12%	12%	6%
4G/5G capabilities	6%	9%	14%	16%	16%	11%
Screen size	1%	5%	7%	12%	21%	32%
Pre-loaded with apps	1%	2%	10%	13%	14%	18%
Phone design and color	1%	1%	6%	7%	12%	17%

Further engagement with customers and phone sellers revealed that customers prefer smartphones with:

1. **Long battery life:** Smartphones with at least 6000 mAh battery life
2. **Phone durability:** Smartphones with resilient screens and frame. Dealers could enhance this by providing a screen protector and handset cover
3. **Processing Speed:** Smartphones with at least Quad-core 1.3 GHz processor processing speed
4. **Camera Quality:** Smartphones with at least a 16MP rear camera and 8MP front camera
5. **Storage capacity:** A smartphone with high storage capacity of at least 2 GB RAM and 32 GB internal storage
6. **Phone capabilities:** Customers prefer phones with dual SIM and 4G/5G capabilities
7. **Brand reputation:** Most customers prefer Tecno, Intel, Redmi, Infinix, and Samsung, based on their favourable price-to-feature ratio.

4.2.3 Cultural and Religious Beliefs

Africa's rich history and culture is so diverse and varies not only from one country to another but also within different regions in the countries. Most Kenyan communities are patriarchal, with men dictating finances and running of the family 41. In such cases, women can only own a smartphone with their husbands' approval42. In this study, 3% of women mentioned that their husbands bought them a SIM card or phone, for use in financial transactions.

> "My husband bought me a SIM card that I should use when sending my mother-in-law money via M-PESA"
> **- Businesswoman, Kilifi.**

In addition, 12% of the women interviewed mentioned that their husbands' presence affected their internet access and usage. Thus, they preferred being offline to avoid conflicts at home.

> "Men here don't like their women being on their phones at night. They may begin to say the woman is not being a diligent homemaker or is spending family time on the phone instead of being present
> **- 36-year-old woman, Kiambu.**

> "Many married women prefer not to use smartphones to avoid being branded promiscuous"
> **- 49-year-old man, Nakuru.**

12% of the women interviewed mentioned that morning and evening hours were family time, during which they could not access their smartphones. Women living in regions with weak network coverage could not go to areas with a stronger signal unless accompanied by their husbands. It is evident that in some cases, spouses restrict women's freedom to own phones and access the internet.

> "The network in our area is not available late at night and I have to walk to the road to access the internet. My husband dislikes this and sometimes follows me"
> **- 32-year-old lady, Kilifi.**

Similarly, 17% of the respondents indicated that religion is a major hindrance to smartphone adoption and internet access. 7% of the respondents, especially in rural areas, termed smartphones as unholy devices because they believed that the devices disseminated content that did not conform to religious teachings. They believe that anyone with a smartphone disobeys religion and may be discriminated against in society.

> "There are many destructive things on these smartphones, and we should be wary of them. Our religion prohibits us from listening to, and watching filthy things, the very things that dominate the internet today. We are warned of punishment for every evil content we consume"
> **- Hotel Manager, Isiolo.**

> "There are some churches where owning a smartphone is linked to being highly exposed to immorality; hence its condemned"
> **- 30-year-old man, Muranga.**

The study revealed that most women chose to use feature phones to comply with their cultural and religious beliefs. Respondents said most women in their communities preferred accessing the internet through their husbands' phones. In addition, the study found that the men also avoided smartphones believing that the gadgets were ungodly. 5% of men indicated willingness to adopt the smartphone if they could access religious content and books such as Quran on their phone:

> "If I can access the Quran on the phone then I can use it"
> **- Hotel Manager, Isiolo.**

These findings highlight that pre-installing religious content on smartphones could encourage customers to adopt them. In addition, zero-rating downloads of religious books and content could improve smartphone uptake among religious communities.

41 Kenyan Culture: https://culturalatlas.sbs.com.au/kenyan-culture/kenyan-culture-family#:~:text=in%20Kenyan%20society.-,Gender%20Roles,or%20disagree%20with%20his%20views.

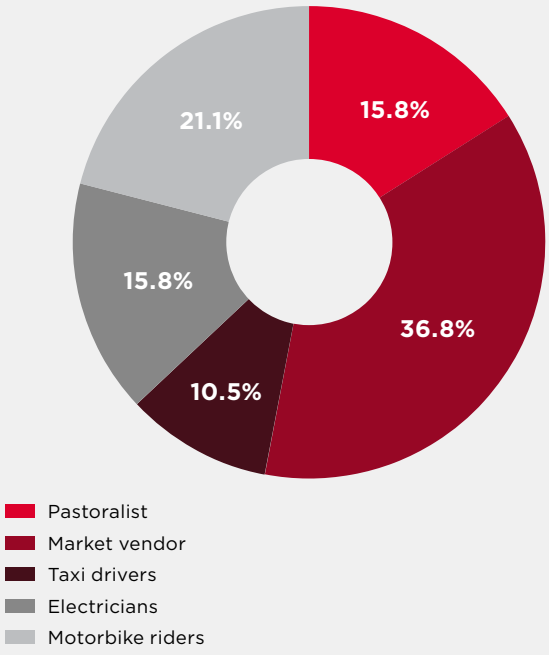
42 Women fall behind in smartphone ownership, use: https://nation.africa/kenya/news/gender/report-women-fall-behind-in-smartphone-ownership-use-3888292

4.2.4 Digital literacy

From the study, 20% of the respondents indicated preference for feature phones because they are easy to use.

Figure 20

Categories of respondents who prefer feature phones



Informal traders and pastoralists prefer basic feature phones because they have apps such as the calculator, torch and alarm that are easy to use and essential for running their businesses.

> "Most of the time, we go to the bush where the smartphone network is not good"
> **- Pastoralist, Isiolo.**

> "A smartphone is complicated. I love straightforward phones, and this feature phone is very easy to use"
> **- Business man, Isiolo.**

> "The calculator is very important to me, especially when I need to calculate the change, to give a customer"
> **- Market vendor, Nakuru.**

Respondents who were market vendors, taxi drivers, motorcycle taxi riders, electricians, and menial workers expressed preference for the simplicity of feature phones since smartphones do not support their day-to-day work activities.

> "I think in this village some people still don't understand why a smartphone is important. For me, as a teacher, it helps me in my work but a casual worker for instance, won't see why they should struggle to have a smartphone."
> **- 43-year-old woman, Kiambu.**

> "The Kabambe (feature phone) is at least manageable. It is cheap to repair, and the network connection is high, more than the smartphone"
> **- Business person, Kitale.**

In addition, 6% of older customers considered smartphones as complex devices. Most of these customers perceived smartphones as a device they do not have the digital skills to operate.

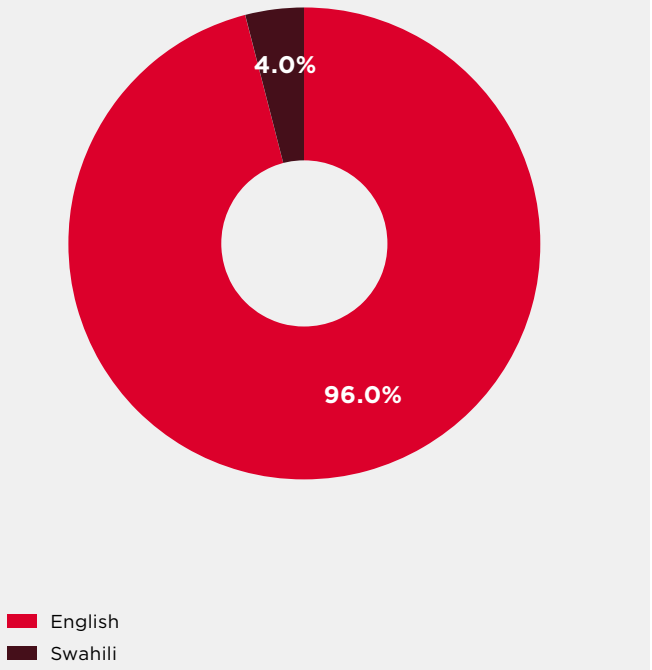
> "I am a senior citizen, and I don't know how to use that phone. This Kabambe is easy to use and I mainly use it to make calls"
> **- 68-year-old farmer, Nakuru.**

4.2.5 Language and Relevance of Online Content

Most communities in Kenya and Africa at large are multilingual and prefer accessing information in a language that is easy to understand [43]. 96% of the respondents access online content in English, while 4% use Swahili.

Figure 21

Language preference when accessing online content



15% of the respondents accessing online content in English indicated that they sometimes did not understand the language, thus requiring assistance from friends and relatives.

> "I sometimes experience challenges understanding complicated English. If only the makers of these phones could incorporate Swahili, as we use both languages in Kenya"
>
> **- 28-year-old man, Kiambu.**

> "English is hard for me. So, I find that I might know something but understanding what's written sometimes is hard, so I find myself stuck whenever my friend assists me with a phone"
>
> **- 29-year-old man, Kiambu.**

20% of respondents using the Swahili language mentioned that the vocabulary used was complex and hard to understand. Although they admitted that the online content was relevant, they struggled to understand the information in fluent Swahili. They said they code-mix (hybridise two or more languages) Swahili, English and their mother tongue when communicating, making it hard for them to understand the fluent Swahili used to create online content.

Literature highlights the complexity of creating and disseminating online content for multilingual communities44. In line with previous studies, this study recommends that content creators, app developers, and search engine companies such as Google identify the language that customers prefer using and involve them in the creation and testing of online content to ensure they can understand it.

43 Multilingualism and language policies in the African context: https://doi.org/10.1080/14664208.2019.1582945
44 Multilingual content: Setting up your site for global users https://veracontent.com/mix/multilingual-content/

5.0 Recommendations

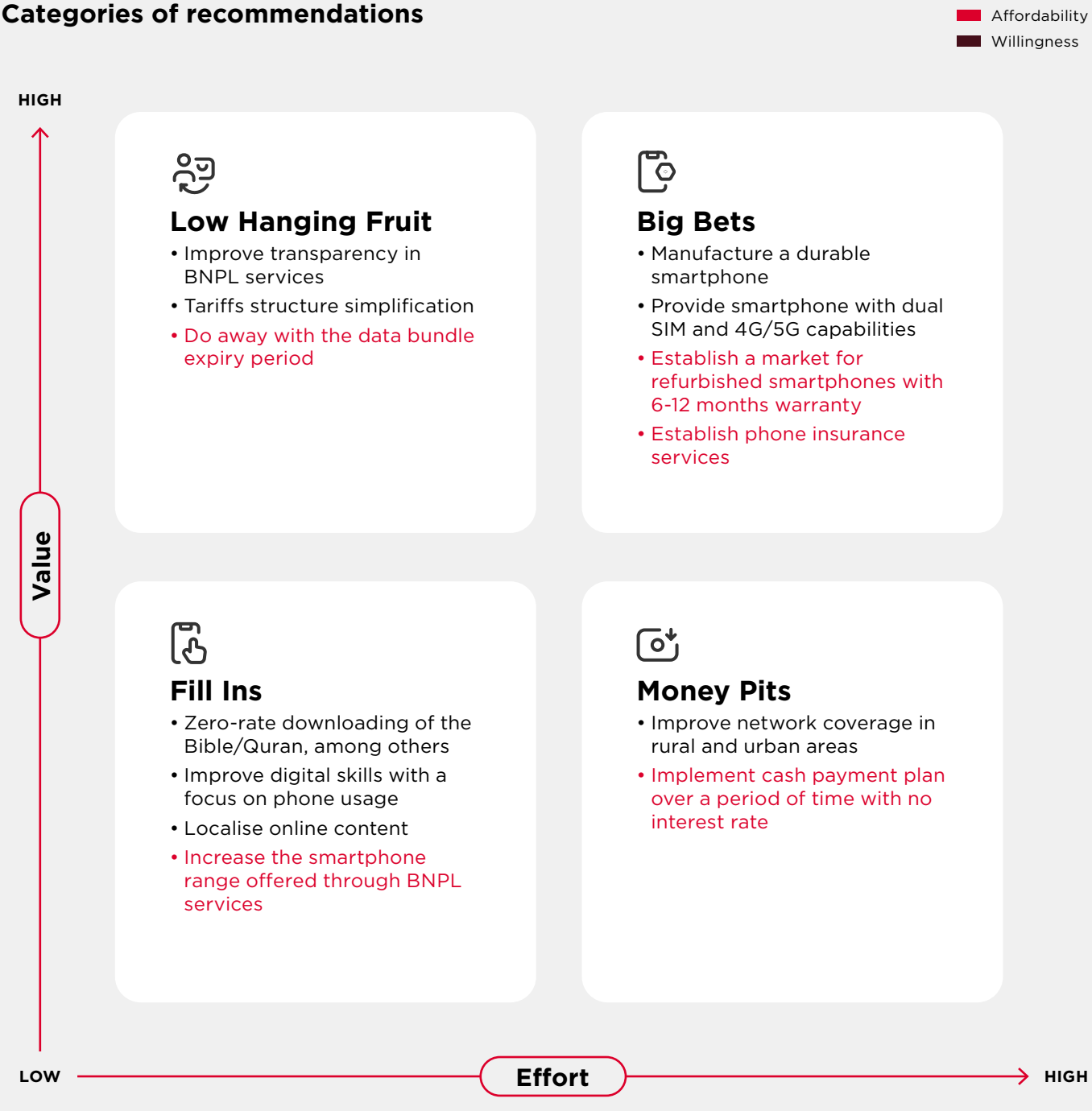


Based on the insights gathered during this study, some recommendations were suggested by respondents to drive smartphone adoption. The recommendations have been grouped into four categories, based on their impact and level of effort required for implementation. The four categories discussed are low-hanging fruit, fill-ins, big bets and money pits.

To verify these recommendations, we collaborated with a local MNO that targeted increasing its smartphone sales by 700,000 units between October 2023 and March 2024 (six-month period). A summary of the key recommendations is shared in Figure 22 below.

Figure 22

Categories of recommendations



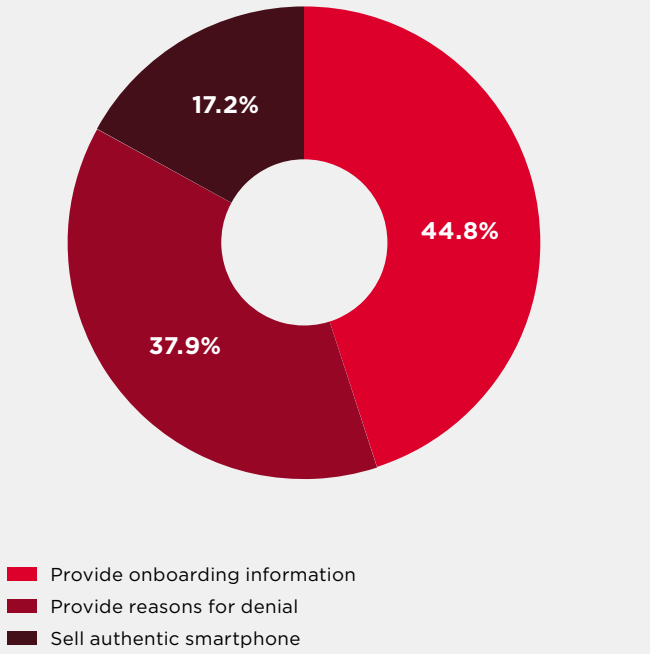
5.1 Low Hanging Fruit Recommendations

The highest impact, shortest timeframe recommendations are informed by major issues from the research that can be addressed relatively quickly, easily and/or affordably.

5.1.1 Enhance transparency of BNPL services to improve trust.

Figure 23

Issues affecting BNPL transparency



The study found that 44.8% of customers who acquired smartphones through BNPL services noted significant trust issues regarding the models. There is lack of transparency and clarity regarding the fee structures and contracting. MNOs and FSPs should focus on creating more transparency on BNPL by training staff better, to then provide clearer guidance to customers by developing user-friendly manuals and hotlines to address concerns. Providers should also incorporate user-friendly guidelines that specify amounts to be paid per month/ week, outstanding balances, payment options, and specific consequences of not meeting payment deadlines. This guidance should be available in both English and Swahili.

In addition, MNOs and FSPs should provide clear onboarding information to prospective customers. 37.9% of surveyed respondents mentioned that they were denied BNPL services without any reasons for the decision. Customers mentioned that clear onboarding information should be provided to enable them check whether they qualify for these services. FSPs can resolve these challenges by providing specific and clear reasons to customers whose applications are declined, explaining which criteria were not met, and documents to be provided.

Lastly, 17.2% of customers claimed that they received false information, which lured them into buying smartphones that did not meet the specifications shared at the point of sale. Respondents said providers should sell authentic and durable smartphones as specified during the contracting period, to gain customers' trust.

5.1.2 Reduce sector-specific taxes on Internet services and smartphones

48% of respondents mentioned that the high cost of the internet hindered smartphone adoption and usage. 55% of respondents complained about high internet costs.

Reduction in excise duty imposed on mobile services and import duty on smart devices could benefit customers, as higher taxes feed into final retail prices paid by customers. A reduction in taxation rates could translate into lower prices as competition would force operators to pass on the lower costs to subscribers. This would help to address one of the key factors driving the current usage gap in Kenya – affordability. Additionally, it would ensure the government is on track to reduce the cost of calls and data to allow citizens, and especially the youth, to use online platforms for entertainment, information and business, enhancing government service delivery through digitisation and automation of all government critical processes, and avail 80 per cent of government services online as envisioned2.

Specific taxes should narrowly target a few goods, mainly because their consumption entails negative societal externalities. Given the positive externalities of broadband connection to the economy, mobile phones and services should generally not be included among goods and services singled out for exceptionally harsh tax treatment. Therefore, a reduction of excise duty is critical.

5.2 Fill Ins Recommendations

The fill-ins recommendations have a low impact but can be implemented easily and within the shortest timeframe to encourage smartphone adoption. They include:

5.2.1 Widening the range of smartphones offered through the BNPL model

36% of the respondents acquired their smartphone through BNPL contracts. However, 37% of respondents mentioned that the available FSPs offer a small range of smartphones, thus limiting their ability to buy their preferred brands. Thus, providers could encourage smartphone adoption by offering a wider variety of phone options, particularly phones priced between USD50 - USD200, for consumers to have more brands to choose from. From respondents' feedback, brands in the order of preference are: Samsung, Oppo, Tecno, Itel, Infinix and Redme. Therefore, FSPs should provide several models of these phone brands, to allow customers to have a variety to pick from.

5.2.2. Localise Online Content.

From the study, 96% of customers access online content in English, while 4% use Swahili. However, 10% of customers accessing content in English mentioned that they found it challenging to understand the vocabulary used. In addition, 4% of customers using Swahili stated they could not comprehend the fluent Swahili used in the online content. Respondents mentioned that they code-mix when communicating with their friends and relatives; hence, preferred to access online content in a similar language. The study recommends improving relatable content through partnerships between MNOs and search engine companies to conduct further research with customers and understand the best approach for sharing information online.

5.3 Big Bets Recommendations

Big Bets recommendations take slightly longer to implement but are critical in addressing key smartphone uptake challenges. They include:

5.3.1 Improved Smartphone Features

60% of customers mentioned that affordable phones in the Kenyan market have limited features and capabilities, making them less desirable. When testing for product preferences, battery life was the most critical for respondents. Respondents indicated a preference for a phone with a long battery life, a decent camera, and sufficient storage. In addition, the phone should have an appealing appearance, as most customers mentioned that the design also determines their purchase decision. Customers are willing to spend between USD50 - USD200 for a phone that has the following features: 6000mAh battery life, good camera with at least 16MP rear camera and 8MP front camera, storage capacity with at least 2GB RAM and 32GB internal storage, and enhanced capabilities such as being 4G/ 5G enabled and having a dual SIM.

5.3.2 Establish Refurbished Phones Market

60% of respondents prefer second-hand phones because they are affordable and have better functionalities and features. Establishing an authentic refurbished phone market in Kenya could improve smartphone adoption in the country. Government regulations should support this market by ensuring the refurbished phones are legitimately owned, have a warranty for at least 6 - 12 months, and are of good quality. The formalisation of this market will improve uptake for those who cannot afford brand-new phones but want to buy from trusted sources.

5.3.3 Establish Phone Insurance Services

Smartphone replacement after damage or loss could be expensive, thus hindering customers from purchasing a new gadget. 50% of respondents expressed the need for MNOs, FSPs and insurance companies to tailor insurance services for customers to take up. Regulatory bodies also need to work closely with MNOs and FSPs to ensure that insurance regulations protect customers and the issuer.

5.4 Money Pits Recommendations

Money pit recommendations require a huge investment, but their impact is minimal. They include:

5.4.1 Implement cash payment for smartphones over a period of time without interest rate

23% of respondents said they could not take up BNPL services. Instead, they prefer an arrangement with the phone seller where they buy the phone on credit and pay for it over a period of time without incurring any interest fees. MNOs and FSPs could implement similar payment plan to encourage smartphone adoption.

6.0 Recommendations Implementation, Monitoring and Evaluation

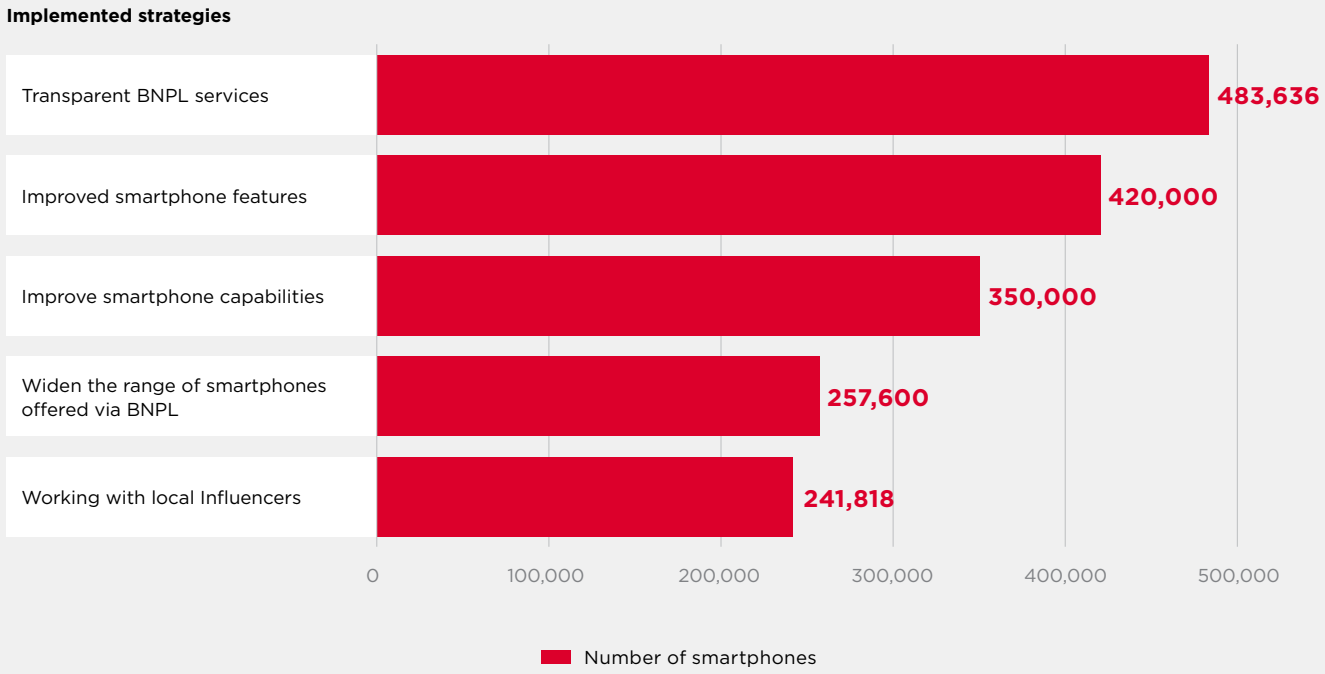


Upon conclusion of the research phase in October 2023, this study collaborated with a local MNO in Kenya to implement some recommendations and evaluate their impact. The Monitoring and Evaluation (M&E) process ran for six months (from October 2023 to March 2024).

The objective of the M&E exercise was to track whether the implemented recommendations could increase sales of smartphones by 700,000 units. In addition, it focused on understanding relevance, efficiency and effectiveness of the recommendations to provide amendments and policy considerations that other MNOs in SSA countries could implement to enhance smartphone adoption.

Figure 24

Recommendations implemented by the service provider



6.1 Monitoring and Evaluation Framework

In collaboration with the service provider, the monitoring and evaluation plan was designed to check the impact of the implemented recommendations periodically.

Quantitative research method was employed to analyse smartphone sales from the Business Intelligence (BI) system.

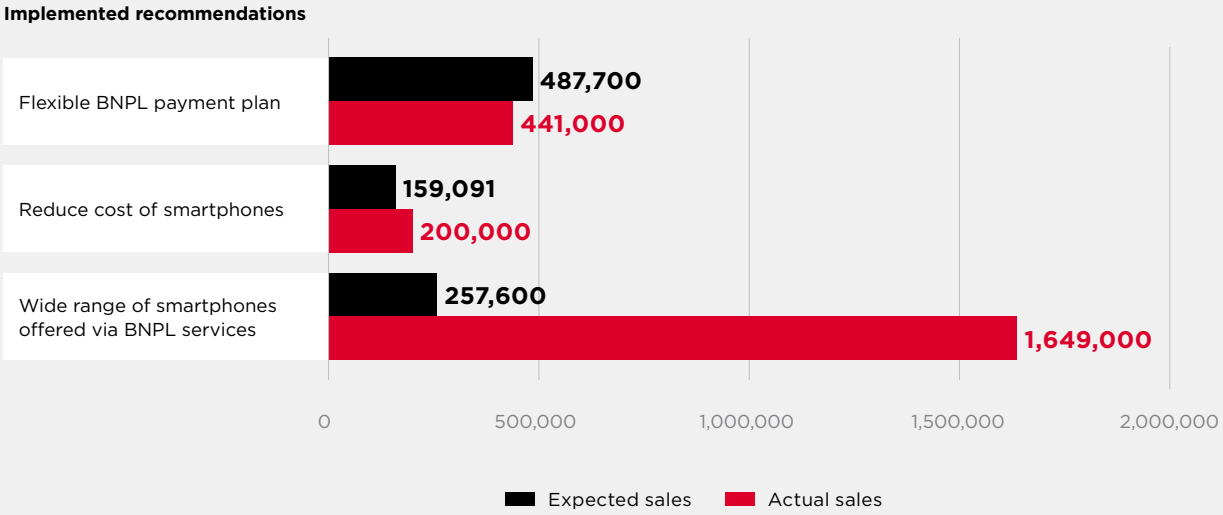
Table 3
M&E framework

Objective	Indicator	Source of Information	Method and frequency of data collection	Expected Sales	Actual sales	Comments
Improve BNPL transparency	Improving the transparency of BNPL services will increase sales by 69.1%	BI tool	Analysing data from the BI on need basis	483,636	441,000	In Sept 2023 the MNO offered customers flexible repayment plans, bundled with GSM resources.
Improve smartphone capabilities	Manufacture of Dual SIM and 4G enabled smartphone will increase sales by 50%	BI tool	Analysing data from the BI on need basis	350,000	700,000	Local assembly of smartphones that cost < USD50 but with improved features and capabilities i.e. devices have dual SIM capabilities with at least 4000mAh battery life, 2GB RAM and 32GB storage and good camera MNO worked with high-reach influencers who drove awareness and engagement for locally assembled and imported smartphones campaigns.
Improve smartphone features	Manufacture of smartphone with good camera, long battery life and large storage capacity with increase sales by 60%	BI tool	Analysing data from the BI on need basis	420,000		
Work with influencers to market smartphones	Working with influencers will increase sales by 34.6%	Ads exposure on social media	Number of customers accessing ads	241,818		
Avail budget phones in the market	Availing budget phones (<USD50) in the market will increase sales by 22.7%	BI tool	Analysing data from the BI on need basis	159,091	200,000	Local assembly of smartphones that cost <USD50
Improve BNPL services	Widening the range of smartphone offered via BNPL will increase sales by 36.8%	BI tool	Analysing data from the BI on need basis	257,600	1,649,000	Partnership with additional Pay-As-You-Go partners to offer a variety of devices via BNPL.

6.2 Analysis of Recommendation Outcomes and Impacts

Figure 25

Expected smartphone sales Vs Actual sale



Reduced Smartphone Cost: Initially the service provider imported phones; but in July 2022, the government of Kenya imposed a 10% excise duty on the importation of phones thus driving the prices of smartphones up4546 . To avail affordable smartphones in the market, a consortium of MNOs and device manufacturers negotiated with the Kenyan government to exempt locally assembled or manufactured phones from excise duty and Value Added Tax (VAT). The government of Kenya amended the Finance Act 2023 issuing tax incentives to MNOs manufacturing or assembling phones in Kenya.

In September 2023, through a joint venture delivered on the government's ambition to avail devices of less than USD50, the service provider commenced local assembly of budget smartphones. The plant aimed to produce up to 3 million mobile phone units annually47. The service provider confirmed that the locally assembly phones were 31% cheaper than the imported one48. These M&E findings indicate that due to the affordability of the assembled phone, 200,000 units were sold at under USD50 thus encouraging the uptake of 4G smartphones within the six-month period49.

It is evident that government policies that focus on providing tax subsidies on locally assembled smartphones could reduce the cost of 4G-enabled smartphones, which encourages smartphone adoption.

45 Mobile phone sales up 6pc in defiance of excise tax:https://www.businessdailyafrica.com/bd/markets/market-news/mobile-phone-sales-up-6pc-in-defiance-of-excise-tax--4152950#:~:text=The%20Treasury%20imposed%20a%2010,the%20form%20of%20price%20hikes.

46 Kenya-made phones to be 30pc cheaper: https://www.businessdailyafrica.com/bd/corporate/companies/kenya-made-phones-to-be-30pc-cheaper--4506304#:~:text=Chief%20financial%20officer%20at%20Safaricom,12%20million%20to%2020%20million.&text=%E2%80%9CThe%20task%20for%20the%20second,to%20enable%20this%20to%20happen.

47 Kenya Sets Up First Smartphone Assembling Plant in East Africa: https://www.safaricom.co.ke/media-center-landing/press-releases/kenya-sets-up-first-smartphone-assembling-plant-in-east-africa

48 Safaricom: Kenya's new smartphone plant could reduce prices by 30%: https://totaltele.com/safaricom-kenyas-new-smartphone-plant-could-reduce-prices-by-30/

49 Safaricom PLC FY24 Investor presentation:https://www.safaricom.co.ke/images/Downloads/FY24-Investor-Presentation-9th-May-2024.pdf

Flexible BNPL Payment Plans: In addition to assembling phones locally, the service provider continued importing smartphone brands such as Samsung, Itel, Tecno, among others, which were sold through dealers. The cost of these phones ranged between USD100 and USD400, while the budget phones cost less than USD50.

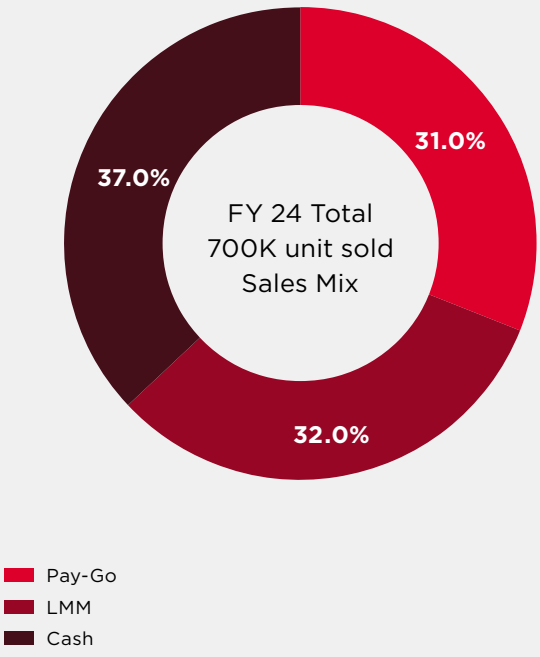
To ensure most customers could access the USD100 - USD400 phones, the service provider revamped its BNPL services, offering customers flexible repayment plans that allowed them to pay daily, weekly or monthly. Customers received 1GB of free data at the point of purchase to encourage them to access the internet. In addition, for each instalment payment, the provider offered customers free voice, data and SMS bundles, based on their payment plan.

The service provider also partnered with various FSPs to ensure customers had access to a wide range of high-end phones on loan. The FSPs provided flexible payment plans for customers to make payments on a daily, weekly, or monthly basis.

The M&E findings reveal that 63% of phone sales were driven by device financing, with the service provider reporting sale of 441,000 high-end smartphones (USD100 - USD400) during this period. Offering flexible payment empowers customers to own a smartphone through a payment plan that aligns with their income flow. It encourages customers to manage finances accordingly to avoid having their phones blocked due to payment default.

Figure 26

Device financing driving 63% of sales



Wide range of Smartphones offered via BNPL services: Through a partnership with FSPs, the service provider previously offered phone brands such as Neon, Itel, Tecno, Samsung, Infinix, Nokia, Oppo, iPhone and Huawei. During this period, the service provider scaled partnership with additional FSPs that offered Vivo, Gionnee and Xiaomi phone brands and additional Samsung, Tecno and Itel phone models as indicated in Table 3. It is evident that partnerships with other BNPL service providers widened the range of smartphones available for sale, thus encouraging customers to buy 1,649,000 smartphones during this period. As a result, this increased 4G attachment by 27% within the six-month period.

Table 3

Smartphone offered through BNPL services

Phone Brand	Phones offered previously	Phones currently in the market
Neon	• Neon Ray pro	• Neon Smarta • Neon Ray Ultra
Tecno	• Spark 7 • Camon 17	• Tecno Pop 7 • Tecno Spark 7 • Tecno Spark 8c • Tecno Spark 9 • Tecno Spark 9t • Tecno Camon 19 • Tecno Pop 7 • Tecno Pop 8 • Canon 20 • Tecno Spark 10 Pro
Samsung	• Samsung A04s • Samsung A03 Core • Samsung A13 • Samsung A12 • Samsung A03s • Samsung Galaxy A05 • Samsung Galaxy A05s • Samsung Galaxy A25	• Samsung A04s • Samsung A03 Core • Samsung A13 • Samsung A12 • Samsung A03S • Samsung A13 • Samsung A15 • Samsung A05S • Samsung A04S • Samsung Galaxy A25 • Samsung Galaxy A05 • Samsung Galaxy A05S • Samsung Galaxy A25 5G • Samsung Galaxy A23 4G
Infinix	• Infinix Smart 3 • Infinix Smart 4 • Infinix Smart 5 • Infinix Smart 4 Plus • Infinix Smart 7 • Infinix Smart 7 lite • Infinix Smart s2 Pro	• Infinix Smart 3 • Infinix Smart 4 • Infinix Smart 5 • Infinix Smart 4 Plus • Infinix Smart 7 • Infinix Smart 7 lite • Infinix Smart S2 Pro • Infinix Smart 8

Phone Brand	Phones offered previously	Phones currently in the market
iPhone	• Apple iPhone 14	• Apple iPhone 15 • Apple iPhone 15 Pro Max • Apple iPhone 15 Pro • Apple iPhone 15 Plus • Apple iPhone 14 • Apple iPhone 14 Pro Max
Nokia	• Nokia C32 • Nokia C22 • Nokia G10 • Nokia C30 • Nokia C21	• Nokia C32 • Nokia C22 • Nokia C31 • Nokia G10 • Nokia C30 • Nokia C21
Oppo	• Oppo A9 • Oppo A3s • Oppo A54 • Oppo A17 • Oppo A31 • Oppo A74	• Oppo A9 • Oppo A3s • Oppo A54 • Oppo A17 • Oppo A54 • Oppo A31 • Oppo A74
Huawei	• Huawei AP263 • Huawei S110 • Huawei AP362	• Huawei AP263 • Huawei S110 • Huawei AP362 • Huawei Nova
Vivo		• Vivo V27 Pro • Vivo V25e • Vivo V25 Pro • Vivo V23 Pro • Vivo V23e • Vivo Y22
Itel	• Itel A24	• Itel A24 2023 • Itel A60 • Itel A70
Gionne		• Gionee P5L • Gionee X2 • Gionee M7 • Gionee M6
Xiaomi		• Xiaomi Redmi 13C • Xiaomi Redmi Note 13 • Xiaomi Redmi A3 • Xiaomi Redmi 10c

Working with Influencers: The service provider worked with influencers to market the wide range of smartphones offered. The influencers marketed the devices through digital ads on Facebook (80+1 reach), WhatsApp (238,596 reach) and ad exposure of 469,616. Customers with 2G smartphones accessed the ads through the Opera Mini web browser and Facebook Lite. In addition, the influencers ran radio and television ads and hosted gigs in communities nationwide to reach customers who could not access the digital ads.

The M&E findings reveal that through the adverts, 30% of customers with 2G enabled phones converted to 4G enabled phones. It is evident that engaging influencers in marketing smartphones through digital or community gigs increased customer awareness (price, specifications, capabilities and payment plans) thus encouraging them to acquire their preferred smartphones from the nearest phone shop.

6.3 Recommendations

6.3.1 Partners Ecosystem

A partner ecosystem is an interconnected network of like-minded companies who join forces to create a harmonious business ecosystem[50]. Partner ecosystems are characterised by collaboration, innovation, and shared resources to achieve exponential growth and success.

The findings from this research evidence the need for MNOs, FSPs, government and local influencers to collaborate in driving agendas that could improve smartphone adoption in Kenya and SSA at large. This study highlights and recommends three partnerships in the telecommunication ecosystem that could be replicated in other SSA countries to improve smartphone adoption and usage.

1. **MNOs and FSPs partnerships:** Through partnerships with various FSPs in Kenya, MNO could provide customers with a wide range of smartphones. The phone prices ranged from USD50 to USD1000, thus encouraging customers to own a smartphone that met their budget. The M&E findings show that this partnership increased smartphone sales during the same period from 1,080,000 units in FY23 to 1,649,000 units in FY24.

   The study reveals that customers who cannot afford smartphones often rely on the BNPL services to acquire their preferred smartphone. However, offering few smartphone brands through BNPL discourages customers from taking up the service. It is essential to expand the BNPL model to new players to provide customers with an extra layer of choices when buying a smartphone. Partnerships between MNOs and FSPs have the potential to catalyse smartphone adoption in SSA. This business model will enable MNOs to increase their revenue through sale of GSM bundles, while FSPs will increase their profit through sale of phones. Thus, this study advocates for scaling MNO and FSPs partnerships to encourage smartphone adoption in SSA.

50 Partners Ecosystem: https://partnerstack.com/glossary/partner-ecosystem

2. **Government tax incentives on smartphone importation:** Previous studies by GSMA have associated the high cost of smartphones in SSA to the hefty importation and distribution costs incurred[51]. This study highlights that tax exemption on smartphones reduces the cost by 30%, hence encouraging more customers to own smartphones. Government policies that exempt excise duty and VAT on smartphone and internet costs should be negotiated and implemented in SSA countries to drive digital inclusion.
3. **Working with local influencers:** Working with local influencers grows customers' awareness about available devices in the market and various payment modes for acquiring a smartphone.

In this study, the service provider worked with high-reach influencers to reach customers through digital ads, television and radio ads, and community gigs. Although there were no metrics to correlate the marketing campaigns to sale outcomes, the M&E findings revealed that digital ads were more effective since they were accessible by customers with internet access (2G, 3G and 4G enabled phones) thus resulting in 30% of the 2G to 4G conversion. Equally, community gigs were important to reach offline customers. Therefore, this study advocates for the collaboration between service providers and local influencers to drive awareness and engagement for campaigns geared towards selling devices.

6.4 Policy Considerations

Smartphone affordability and accessibility is a priority for African countries to drive digital inclusion. However, the high cost of imported phones is a deterrence to closing the digital gap38. Findings from this study show that government tax incentives for locally assembled smartphones enabled affordability in Kenya, thus resulting in 4G attachment of 30% within the six-month period. Financial policies that waive excise duty and VAT on smartphones should be considered by other African countries to enable local assembly of affordable smartphones. In addition, SSA countries should consider reducing import taxes on internet enabled phones and mobile services, to spur smartphone adoption and usage in the region

51 Mobile Tax Policy and Digital Development: https://www.gsma.com/solutions-and-impact/connectivity-for-good/public-policy/wp-content/uploads/2023/10/Mobile-Tax-Policy-and-Digital-Development-A-study-of-markets-in-Sub-Saharan-Africa.pdf

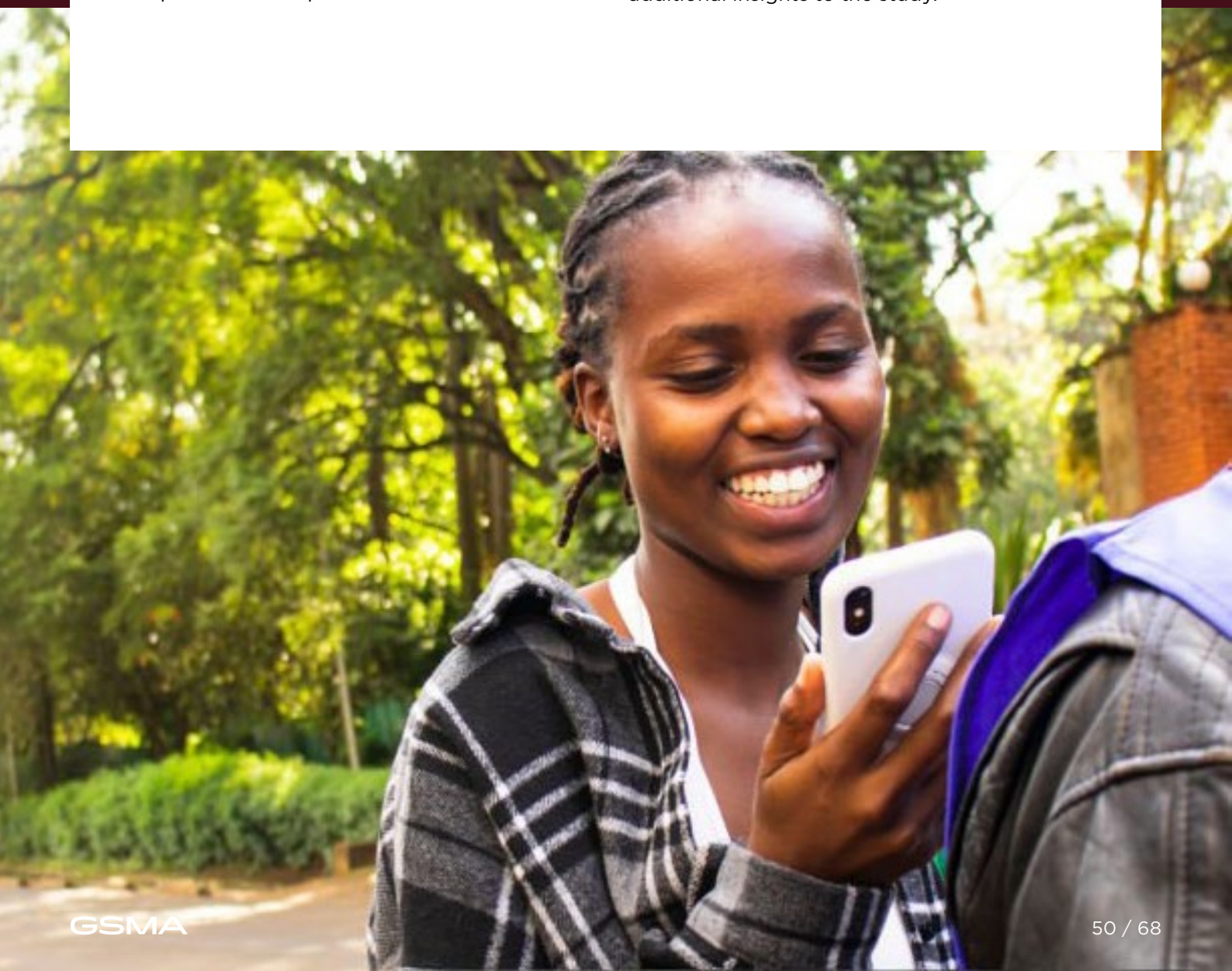
7.0
Conclusion



This study adopted a mixed-method research approach to identify factors that hinder smartphone adoption in Kenya. Smartphone uptake is a complex decision-making process for individuals; and from this study, we recognised that smartphone adoption is not merely a technical or infrastructural dilemma; rather, it is a confluence of socio-economic, cultural, and logistical factors. Based on the affordability and willingness factors identified, this study provided a set of strategic recommendations to increase smartphone uptake rapidly and implemented some in collaboration with a local service provider for a period of six months. Throughout this period, the impact of the strategies was monitored and evaluated, concluding that establishing and enhancing partnerships between stakeholders in the mobile industry is key to driving smartphone adoption in Africa. It presumes that partners' collaborations in the telecommunication ecosystem will increase customer reach and tap into new, unexplored smartphone markets.

To examine the feasibility and efficacy of partnerships in driving smartphone adoption and usage, further studies should be conducted in other African countries. The studies should focus on identifying additional factors affecting smartphone adoption in the region, and recommendations that could improve smartphone uptake.

This study was conducted over a span of ten months with limited access to survey respondents due to tight timelines and budget. Another limitation to this study was absence of metrics to correlate the marketing advertisements and campaigns to unit sales of smartphones. We hope that future research could address these limitations to provide additional insights to the study.



Appendices

Appendix 1: Interview Guides

Qualitative Research Guide (Customers without smartphone/has accessed Smartphone)

Bio & demographics

1. Date:
2. Location:
3. Age bracket (18-25, 26-30, 31-40, 41-50, +50:)
4. Sex:
5. School/Working/homemaker/job searching:
    a. If school, what level?
    b. If working, self-employed or employed?

Phone Specifications

1. Which phone are you currently using? Do you know your phone model? (Ask the respondent permission to check the phone model)
2. Is your phone a dual SIM or single SIM?
    a. Why did you decide to use a phone with dual/ single SIM?
3. Did you buy this phone or was it given to you as a gift?
    a. **(If bought)**
        i. Why did you decide to get this phone?
        ii. If you had another option, which phone would you buy?
        iii. Why did you buy your phone? over a smartphone?
    b. **(If gifted)**
        i. Why did your friend/ relative stop using this phone?
4. Which features does your phone have? Or what can you do with your phone?
    a. Make or receive a call
    b. Send or receive a text message
    c. Access the internet (such as Facebook or WhatsApp or YouTube or Google?)
    d. Money transfer
5. Are these features what you had expected when you bought/got the phone?
6. Which features are most important to you and why is that?
7. Why don't you use the other features you mentioned above?
8. (If all features are not mentioned in Q4) Your phone also has features X,Y,Z (list the features). Why don't you use them?
9. What would you like to be able to do with your phone but are not able to do so now?
    a. Please explain or give an example why this would be important for you

Phone Usage

10. Which phone features do you use most and why? (rank them)
    a. How often do you use these features?
    b. What do you like most about this phone?
    c. What additional features would you wish for?
        i. Why is/are this/these feature(s) now something you need?
    d. What would you suggest needs to be done to help you use the phone efficiently (meet the needs mentioned above)?

Smartphone and Internet Access

11. Have you ever used a phone that has access to the internet or a display/screen that uses the touch of your finger(s) to access what you want to do or need from the device?
12. If yes, whose smartphone did you use to access the internet?
    a. When was the last time you used a smartphone to access the internet?
    b. What do you do online?
    - Listen to music
    - Watch videos
    - Share photos
    - Communicate (email, WhatsApp etc)
    - Money transaction
    - Online buying/ selling

    c. How often do you borrow smartphones to access the internet?
    d. Do you use your SIM card mobile data or Wi-Fi to access the internet?
    e. **(If SIM Card)**
        i. Do you insert your SIM card or do you use one belonging to your friend(s)/ relative(s)?
        ii. Which plan/tariff do you use?
            1. If you do not use a data bundle, what is your reason?
            2. If you use a data bundle, what kind do you use and what is your reason?
        iii. How does this access meet your need(s)?
            1. Is it slow or fast enough for you to share or receive information?
            2. Is the cost to share or receive information fair when you consider your alternative cost for doing the same thing using other means?
        iv. Do you use a different SIM card(s) to access the internet?
        v. If yes, please explain which SIM card you use and why you prefer it?
            1. Is it slow or fast enough for you to share or receive information?
        vi. Is the cost of sharing or receiving information fair when you consider your alternative cost for doing the same thing using other means? What time of the day do you usually access the internet?
        vii. Have you noticed a difference in the cost of the access to the internet if you go online at different times of the day?
        viii. If yes, which is the best time for you and why is it so? What kind of information do you share or receive when you access the internet?
    f. **(If Wi-Fi)**
        i. Whose Wi-Fi do you use?
        ii. Do you pay for the Wi-Fi access or do you use it for free?
    g. How else do you access the internet other than via a friend(s)/relative(s) smartphone?

Information Relevance and Privacy

13. Do you find the information you access online relevant or useful?
    a. Please explain or give an example if it is/ not relevant or useful for you
14. What additional information would you need to improve your experience?
    a. Please explain or given an example to understand why you need it
15. In terms of connectivity do you experience instances or situations when you cannot access the internet from your device, in your location?
    a. How often does this happen?
    b. Does it affect your need to share or receive information when it happens?
16. What measures or actions do you take to keep your privacy in what you do while using a shared phone? **(Wait and see whether they will mention the action below before asking them)**
    a. Do you delete any or all information e.g. text messages or browsing history
    b. Do you agree to any internet site requesting you to store your password for future log in to the same site? E.g. Gmail login
17. How important is maintaining privacy online for you ?

18. What are the challenges you face while using these channels to access the internet? **Please read through a list of what these may be and for each answer, ask the respondent to give an example of how this challenge is experienced:**
    a. Inconvenience to access the service when you need it
    b. Maintaining privacy
    c. Cost
    d. Understanding the information - language? Or comprehension?

Smartphone Ownership (Ask this question If the respondent access the internet)

1. Briefly list the reason(s) why you currently do not own a smartphone
    a. Cost of device
        i. How much do you think a smartphone would cost?
        ii. How much are you willing to pay for a smartphone of your choice?
        iii. How would you get a smartphone if you wanted to buy one?
        iv. Are there affordable feature phones with internet access in your area?
            1. If yes, how much does the phone cost?
        v. Between Safaricom, Airtel and Telkom, which service provider sells cheap smartphones in their shops?
        vi. Which telco offers a favourable financial model plan for a smartphone?
        vii. Which other retailers sell smartphones at favourable prices? **(rank them based on the prices mentioned by the respondent)**
        viii. Are you in any chama?
        ix. Does your chama allow customers to acquire phones through them?
        x. Would you like to acquire a smartphone through the chama?
    b. Cost of data
        i. How much do you pay for data and what is your preferred data plan?
        ii. Between Safaricom, Airtel and Telkom which telco offers cheaper data plan?
    c. Alternative exists - normal phone
    d. No need for accessing internet on a regular basis
    e. Internet access using feature phone is sufficient
    f. Does not understand the language used
    g. Does not know how to use the device from previous experience using a friend(s)/ relative(s) smartphone
2. For each reason listed by the respondent above, please ask the following question based on the listed reason:
    a. Cost of device - please explain or give an example how this is preventing you from owning a smartphone
        i. Is the cost beyond your ability to pay the full amount upfront?
        ii. If yes, is there any service provider offering you a payment plan that financial model meets your needs and or your ability to pay for it?
    b. Cost of data - when you used your sim card on a friend(s)/relative(s) smartphone,
        i. Was the amount of airtime which was used worth the time you spent on the internet or information or data you sent or received when accessing the internet?
        ii. Did you experience any negative or positive reaction upon reviewing the balance of your airtime after accessing the internet or applications like WhatsApp or YouTube or Google or Facebook?
        iii. Were you informed by your friend(s)/ relative(s) on using a mobile data bundle instead of your airtime balance to access the internet or applications like WhatsApp or YouTube or Google or Facebook?
    c. Alternative exists - Are you satisfied with using your phone for just voice calls or sending and receiving text messages and or mobile money?
    d. No need for accessing internet on a regular basis
        i. How often do you have a need to access the internet? Once a day/week/month
        ii. Do you have easy access to your friend(s)/ relative(s) smartphone in order to access the internet when you need to do so?

e. Internet access using feature phone is sufficient

   i. What do you regularly access from the internet? WhatsApp? YouTube? Google? Facebook? Other?

f. Does not understand the language used - go to section on Language

g. Does not know how to use the device from previous experience using a friend(s)/ relative(s) smartphone,

   i. Did you find it easy or difficult to find what you needed when you accessed the internet?

   ii. If it was difficult, describe what you were trying to do and whether you succeeded or abandoned it?

   h. Did your friend(s)/relative(s) assist you in trying to do what you needed at that time or were they also unable to help you?

Please list the features that you would like to have in a smartphone.

Language

1. Which language do you use to share or receive information from the internet or other services such as voice or SMS, using access content on your phone and online?
2. Do you encounter any challenges sharing or receiving information in this language?
   a. If yes, which language(s) do you prefer to use?

Appendix 2: Focus Group Guide

Guide for focus group classification

1. People with Smartphone and have access to the internet:
2. People with Smartphone but do not access the internet:
3. People with feature phones and do not access the internet:
4. People with No smartphone but probably uses a friends/family members phone to access internet:

Why are they accessing smartphones, no internet, relatives' phones?

Some questions for FGD:

People with Smartphone with internet:

1. What are the main reasons why you use a smartphone with the internet?
2. What are the benefits of using a smartphone with the internet?
3. What are the challenges of using a smartphone with the internet?
4. How much do you pay for your smartphone and internet plan?
   a. Are these plans affordable or how would you like telecoms to amend them to meet your needs
5. Would you be willing to pay more for a smartphone with better features?
6. How would you like to pay for your favorite smartphone? Probe to understand these options)
   a. Cash
   b. Using financial model (which one/s are most preferred and why?)
   c. Using *Chama* as a source of owning a phone where members can pick a payment plan)
7. What are the most important features to you in a smartphone?

People with Smartphone but do not access the internet:

1. Why do you have a smartphone but do not access the internet?
    a. Does the cost of the internet play a significant role in you choosing not to access the internet on your phone? Could you provide more details on this?
    b. How does limited connectivity or unreliable internet access affect your decision to use the internet on your smartphone?
    c. How does the level of your digital literacy influence your choice to use the internet on your smartphone?
2. Do you understand the language used online?
3. Do you have the skills needed to use the internet? Example of the skills …
4. Do you find the online content to be relevant to your needs?
5. What are the most important things that you would use the internet for if you had an internet plan?
6. What is the main reason why you don't have an internet plan?
7. What are the challenges of having a smartphone without the internet? Can expound on how they do their banking/shopping, communicate with friends and productivity at work and school, access important information quickly etc.
8. Are there any other barriers that prevent you from accessing the internet? Other than cost (if mentioned).
9. What are the benefits of having a smartphone without internet? What apps do you use and for what purposes?

People with featured phones and do not access the internet:

10. Why do you prefer using a feature/button phone?
11. What are the benefits of having a feature/button phone?
12. What are the challenges of having a feature/ button phone?
13. How do financial considerations influence your choice of owning a smartphone?
14. What features or functionalities would make you transition from a feature phone to a smartphone if you could afford one?
15. What payment plan or arrangement would make a smartphone a consideration to you?
16. How would a smartphone impact your daily routine if you owned one?

People with No smartphone but use internet probably a family members phone to access internet:

1. Why don't you have a smartphone?
2. How do you access the internet? Wi-Fi/ data plan

If Wi-Fi

    a. Who provides the internet services
    b. Do you pay for it
    c. When you access it

If data plan

    d. Do you use your sim card or friend/family members sim card?
    e. Which data plan do you use
    f. Does it meet you need to access content online (IF no, how could this plan be improved)
    g. When do you access the internet (why this time, would you like to access it on other time slots? How would you like the data plan to be adjusted to meet your needs)

3. What are the benefits of accessing the internet?
    a. What content do you access?
    b. Is the content relevant
    c. Is the language used easy to understand?

4. What are the challenges of accessing the internet?
5. Would you be willing to buy a smartphone if you could afford it?
    a. Would you prefer a single or dual SIM card (WHY the selected option)
6. How would you wish to buy your favourite phone (probe on these options)
    a. Cash
    b. Payment plan (Which plan and why the proposed payment plan)
    c. Chama
7. What smartphone features do you prefer?

Appendix 3:
Key Informant Interview Guide

General background

1. What is your role and responsibilities within this shop?
    - Do you have another shop that sells phones?
2. How long have you been involved in phone distribution in this area?
3. Please explain where you get your phones and how you distribute them in this region.

If Import

a. From which country?
b. Which models do you import? Why do you prefer these phones over others?
c. What are the challenges of importing phones?
d. What recommendation would you provide to curb these challenges?

If local products

e. Which manufacturers do you deal with and why?
f. What are the benefits of selling these phones over imported phones?
g. What are the challenges of selling these phones?

4. What are the main challenges you face when distributing smartphones?

Type of Phones

1. What types of phones do you sell at your shop?
    - Which model?
2. Are they 2G, 3G or 4G enabled? (Get the percentage of these categories)
3. What are the price ranges of smartphones and feature phones at your shop?
4. Where do you source your phones from? Is there a difference in price compared to sourcing locally (Phones made in Kenya)?
5. How many phones do you sell on a daily/weekly/monthly basis?
6. Which phones do you sell most between smart and feature phones?
    a. Explain the answer to question 6
    b. Which features do these phones have? (rank them)
    c. Why do X phones sell more than Y phones? (Rank the reasons)
    d. Which brand of smartphones sells most and why? (rank them)
    e. How do you market your products to increase sales?
7. How do you stay informed about the latest trends and technologies in the smartphone industry?

Know Your Customer

1. Who are your main customers? (youngster, middle age, senior citizens)
    a. Which features are these groups interested in?
2. What is the main reason your customers give for acquiring new phones (for personal use, business, content creation)
3. What are the features that customers focus on when acquiring a phone for:
    a. Business purposes
    b. Content creation
    c. Personal use
    d. Academics

Phones features

1. What are the key factors influencing consumer choices when purchasing smartphones (rank them) (Social, financial, economic contexts etc)
2. What are the phone features that customers consider when purchasing the phones? (rank them)
    a. How do you support the customers to ensure they buy a phone that is compatible with their business/ personal needs?
    b. What is your Return policy? If yes provide details
    c. What happens if the customer wants to change the phone with another model?
        i. Do you have a time frame given to the customers before they can return the phone?
    d. What are the best-selling phone models?
        i. Why is this so?
        ii. What is the price range of these phones?

Digital Literacy

1. Do you teach your customers how to use a phone according to their needs?
    a. If yes, please explain how you enhance phone usage skills?
    b. Which language do you use while interacting with your customers?
2. Do you offer after-sale service to these customers when they approach you? If yes please explain
3. Do you have a customer care line/social media page where customers can reach you when they need assistance from you?
    a. If yes, explain how these platforms are used to enhance phone usage skills

Financial Model

1. Which payment plan do customers prefer when buying phones from your shop? (cash/ BNPL)
2. Do you have financial models that customers can take up if they cannot afford to pay for their desired phones?

If yes

a. Please give details about these models
b. What are the factors you consider before issuing phones through these models?
c. What is the acceptance rate of these models?
d. What are some of the issues that customers complain about these models?
e. What are some of the challenges you face as you offer these financial services?
f. Please share recommendations for the aforementioned challenges.

If no

g. Why don't you offer these services?
h. Do you refer customers to other institutions that offer these services?
i. If yes, which model do you recommend?
j. Why do you recommend this model/model?

Refurbished Phones

1. Do you sell refurbished phones at your shop?

If yes,

   a. Where do you get these phones from?

   b. Do you allow customers to trade in their old phones when they want to upgrade their phones?

   c. Do these phones have a warranty to ensure customers acquire quality phones?

   d. What are the challenges you face when selling these phones?

If no,

   e. Why don't you sell refurbished phones?

   f. Do customers come to your shop requesting for these phones?

   g. If yes, where do you refer them to?

Insurance Cover

1. Do you offer insurance covers for the phones you sell at your shop?

If yes,

   a. Please describe the different options of cover you provide

   b. What motivated you to come up with these cover options?

   c. What are the benefits and challenges of offering these covers?

If no,

   d. Why don't you offer phone insurance cover?

   e. Do you recommend your customers to insurance companies that offer these covers?

   f. Do you wish to offer these covers in the future

   g. How would you tailor these covers to meet your customers' needs?

Enhancing smartphone adoption

1. How does the smartphone usage in your area look like in the next year, 5 years

2. What marketing strategies do you adopt to increase smartphone sales?

   a. Check whether they have influencers

3. How can you enhance smartphone adoption in your region?

   a. a) In your opinion, what would make people in your area increase their phone purchases within the next 6 months?

4. What are some factors that phone manufacturers and telcos should consider when manufacturing and selling phone and internet products?

   a. Internet coverage

   b. Data bundles

   c. Phone Features

Appendix 4:
Survey Questions

Do you consent to take part?

- Yes
- No

Background Information

- Name
- Gender:
  - Male
  - Female
  - Prefer not to say
- Age:
- Location: (County)
- Highest level of education completed:
  - Primary completed,
  - secondary completed,
  - College completed,
  - University completed,
  - Post graduate completed
- Employment:
  - Employed
  - Self- employed
  - Job searching
  - Not working (home maker, retired, other)
- Marital background:
  - Married
  - Single
  - Dating
  - Divorced
- Which of the following best describes your current situation:
  - I own a smartphone and use the internet with it
  - I own a smartphone but do not use the internet with it
  - I own a feature phone and use the internet with it
  - I own a feature phone and do not access the internet with it
  - I own a different type of phone and access the internet on someone else's phone
  - I own a different type of phone and do not access the internet
  - I do not own a phone
- If you own a smartphone, did you buy it yourself or was it a gift?
  - I bought it
  - It was a gift
- Was it new or pre-owned?
  - It was new
  - It was pre-owned
- If you bought it yourself, when did you buy it?
  - 0-2yrs ago,
  - 3-5yrs,
  - More than 5 years ago

Section 1: Smartphone Preferences

What's your preferred smartphone brand (select three options)

- Samsung
- iPhone
- Tecno
- Infinix
- Oppo
- Nokia
- Huawei
- Itel
- Neon
- Others (specify)

Which features attract you to the phone selected in the above question?

- Good camera quality
- High storage capacity
- High processor speed
- Large screen display
- Long battery life
- Good security features
- Other (specify)

When thinking about buying a smartphone, what are the key factors you consider?

- Safety and security factors (My neighbourhood is not safe to use a smartphone)
- Economic factors (The phone help me do my work effectively saving me time or money)
- Social factors (The phone has a good reputation, and has been recommended by friends and family)
- Affordability factors (The cost of the phone is more important)
- Other factors (please specify)

Please explain how the selected factors above influence your decision to own a smartphone.

Is there anything else you'd like to share about your smartphone preferences or experiences? (Open-ended response)

How much are you willing to pay for a smartphone?

- KSh1000 - KSh5000
- KSh5001- KSh10000
- KSh10001- KSh20000
- KSh20001 - KSh30000
- KSh30001- KSh40000
- KSh40001- KSh50000
- Above KSh50000

What is the maximum amount you would pay for a phone?

Section 2: Smartphone Features

Rank the following smartphone features from most important to least important (Drag and drop the options):

- Battery life
- Camera quality
- Storage capacity
- Large Screen
- Dual SIM support
- Processing speed

Rank the following smartphone features from most important to least important (Drag and drop the options):

- Operating system (e.g., Android, iOS)
- Brand reputation (e.g., Samsung, Apple)
- Warranty that comes with the phone
- Durability (resistance to damage)
- Comes pre-loaded with apps
- 4G or 5G instead of 3G
- Design or colour of the phone

If you were to purchase a smartphone today, costing KSh 15,000, which of the following options would you choose? (Select one):

- **Smartphone A:**
  - Dual SIM
  - A battery that lasts more than two days, with moderate to heavy use
  - 128MB storage capacity (can store 10 apps, 500 photos and 10 videos)
  - Average quality camera
  - 5 inches good screen display quality.
- **Smartphone B:**
  - Dual SIM
  - A battery that lasts for one day, with moderate to heavy use
  - 256 MB storage capacity (can store 20 apps, 900 photos and 30 videos)
  - Good quality camera
  - 6 inches below-average screen quality.
- **Smartphone C:**
  - Single SIM
  - A battery that lasts more than two days with moderate to heavy use
  - 256 MB storage capacity (can store 20 apps, 900 photos and 30 videos)
  - Average quality camera
  - 5 inches below-average screen display quality.
- **Smartphone D:**
  - Single SIM,
  - A battery that lasts for one day, with moderate to heavy use
  - 256 MB storage capacity (can store 20 apps, 900 photos and 30 videos)
  - Good quality camera
  - 6 inches below-average screen quality.

Please provide the reason for your choice above

Section 3: Phone Ownership Process

Which option have you used to buy a smartphone?

- Cash payment
- Buy now pay later or pay as you go option (e.g. Lipa mdogo mdogo, M-Kopa)
- Second-hand or refurbished phone
- Lay by (paying on instalments and picking the phone once complete payments)

Have you ever tried buying a phone using a Buy Now, Pay Later (BNPL) option? (Select one):

- Yes
- No

If yes

Have you ever been denied BNPL option for a smartphone purchase?

- Yes
- No

If yes If you were denied a BNPL option for a smartphone purchase, what do you think was the main reason? (Select one or more):

- Poor credit score
- High down payment charges
- Lack of required documentation
- High-interest rates
- No reason given
- Other (please specify)

If you can't afford a new phone, would you buy a second-hand phone from a reputable phone dealer shop?

- Yes
- No
- Don't know

If yes, what factors would you consider when buying a second-hand phone (multiple option)?

- The phone has a warranty e.g. guaranteed for 12 months
- The phone is from a reputable brand
- The phone features are of high quality
- The price
- All the above

If no, give reasons for not buying a second-hand phone

Section 4: Digital Skills

Do you get support from the distributor on usage of smartphone before buying it

- Yes
- No

Rate your ability to use a smartphone for each of the following (Strongly Agree/Agree/Disagree/ Strongly Disagree)

- I know how to send messages using a smartphone
- I know how to make and receive calls using a smartphone
- I know how to access the internet with a smartphone
- I know how to install applications (apps) on a smartphone
- I know how watch videos on a smartphone
- I know how to play games on a smartphone
- I know how to turn my data on/off with a smartphone
- I know how to use Bluetooth with a smartphone
- I know how to chat and share photos and links on WhatsApp and Facebook

Are there any issues with using a smartphone that you would like to be assisted with (multiple selection)?

- How to operate the phone
- How to access the internet
- How to watch videos, and listen to music online
- How to make payments or pay bills online
- How to install applications (apps)
- How to turn data on/off or limit data usage

How would you like to receive support

- Support through a customer care number
- Support through social media platforms
- Walking into the shop to talk to the sales representatives

Section 5: Smartphone Knowledge and Brand Awareness

Do you feel knowledgeable about different smartphone models and their associated prices? (Select one):

- Yes
- No

If yes, Can you name at least three smartphone models and their approximate prices in your region? (If you answered "No" to the previous question, please skip this one.)

Read the descriptions of the phones below, then select which ones you knew about before this survey? (Select multiple):

- **Techno Pop 7 Pro**
  - Price: KSh14,300
  - RAM: 3/4GB
  - Storage: 64 GB
  - Battery: 5,000 mAh
  - Camera: 13 MP + QVGA
  - Selfie: 5 MP
  - Display: 6.56 inches
  - Processor: Mediatek MT6761 Helio A22
  - Connectivity: Dual SIM, 4G, Wi-Fi
  - OS: Android 12, HIOS 12
- **Infinix Smart 7 HD, 6.6**
  - Price: KSh11,600
  - RAM: 3/4GB
  - Storage: 64 GB
  - Battery: 5,000 mAh
  - Camera: 8 MP + AI lens
  - Selfie: 5 MP
  - Display: 6.6 inches
  - Processor: OCTA-CORE 1.6GHz
  - Connectivity: Dual SIM, 4G, Wi-Fi
  - OS: Android 12
- **Oppo A16k, 6.52**
  - Price: KSh14,800
  - RAM: 3GB
  - Storage: 32 GB
  - Battery: 5,000 mAh
  - Camera: 13 MP + AF supported
  - Selfie: 5 MP
  - Display: 6.52 inches
  - Processor: MediaTek Helio G35 2.3GHz
  - Connectivity: Dual SIM, 4G, Wi-Fi
  - OS: Android 11
- **Safaricom Neon Ray 2**
  - Price: KSh5350
  - RAM: 16GB
  - Storage: 16 GB
  - Battery: 5,000 mAh
  - Camera: 5 MP
  - Selfie: 2 MP
  - Display: 5 inches
  - Processor: 16GB Rom
  - Connectivity: Single SIM, 4G, Wi-Fi
  - OS: Android 10

If you didn't know about any of these phones before, would you now consider buying one of them?

- Yes
- No
- I don't know

If you knew about these phones, why have you not bought any of them?

What sources do you rely on to learn about smartphones and their features? (Select one or more):

- Friends and family
- Online reviews and forums
- In-store sales representatives
- Television and advertisements
- Social media influencers
- Other (please specify)

Section 6: Insurance Cover

Do you have an insurance cover for your phone?

- Yes
- No

Would you be willing to pay insurance for your smartphone when purchasing it, with an increase of around 10% of the total value of the phone?

(This could mean getting a replacement phone of the same or equal value when stolen, lost or damaged)

- Yes
- No
- Not sure

Section 7: Language and Smartphone Usage

In what language(s) do you primarily use your smartphone? (Select one or more):

- English
- Swahili
- Other (please specify)

What challenges do you encounter while using a smartphone?

- Language (High, Intermediate, low, None)
- Ease of Navigation (High, Intermediate, low, None)
- Understanding Content (High, Intermediate, low, None)
- Battery Life
- Physical Design (comfortable to hold and use) (High, Intermediate, low, None)
- Camera quality performance (High, Intermediate, low, None)
- Internal and External Storage and File Management (High, Intermediate, low, None)
- Customization (Preference to suit needs including changing the language or screen background etc) (High, Intermediate, low, None)

For challenges selected above, kindly elaborate on each (Open-ended response)

Section 8: Mobile Data and Connectivity

14. Do you use Wi-Fi network or mobile data to access the internet

- Wi-Fi
- Mobile data
- Both
- I don't use the internet

Which mobile service provider data plan do you use (multiple selection)?

- Safaricom
- Airtel
- Telcom

Do you experience connectivity issues when using Safaricom mobile data in your area, (Select one):

- Yes often
- Yes occasionally
- No

If yes, what do you experience these challenges at certain times of day or in certain locations?

- At certain times of the day
- In certain locations

If time
What time of the day do you usually experience internet connectivity challenges?

- Morning 7 am to 10 am
- Mid-day 11 am- 1 pm
- Afternoon 2 pm- 4 pm
- Evening 5 pm- 6 pm
- Early night 7 pm- 9 pm
- Mid night 10 pm- 12 pm
- Late night 1am- 4p am
- Dawn 5 am-6 am

If Location
Which locations do you experience connectivity challenges? (open-ended)

How much do you spend on data per week?

How much are you willing to spend on mobile data a week? (Please detail the mobile service provider and amount of MB/GB gained)

- Safaricom
  - KSh50 200MB
  - KSh99 for 500MB
  - KSh250 for 1.5GB
  - KSh500 for 3.5GB
  - KSh999 for 10 GB
- Airtel
  - KSh50 for 350MB+ free whatsapp
  - KSh100 for 750MB + free whatsapp
  - KSh250 for 3GB+ free whatsapp
  - KSh500 for 6.5 GB+ free whatsapp
- Telcom
  - KSh19 for 40MB
  - KSh49 for 150 MB
  - KSh99 for 400 MB
  - KSh999 for 12 GB

Section 9: Cultural and Societal Influences

17. Are there cultural or societal factors that hinder you from using a smartphone?

- Yes
- No

If yes

Which of the following aspect hinder you from using a smartphone

- negative comments from neighbours or community members about smartphone use
- Negative comments from the religious community about smartphone use
- Negative comments from your family, including parents, or husband / wife about smartphone use

Please explain how the selected issues above influence you from owning and using a smartphone (open ended)

If no

Do any of the following aspects hinder people in your region from owning and using a smartphone

- Cultural issues
- Religious issues
- Social issues

Please explain how the selected issues above influence people from owning and using a smartphone (open-ended)

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