



INFLUENCE OF STAKEHOLDERS' INVOLVEMENT ON IMPLEMENTATION OF ACCESS TO SMARTPHONE PROJECTS IN RWANDA. THE CASE OF ITEL RWANDA

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ABSTRACT

Access to smartphones is a critical enabler of digital inclusion, economic growth, and social development. In the context of Rwanda, where smartphone penetration is on the rise, understanding the role of stakeholders in shaping the implementation of smartphone access projects is of paramount importance. This study explores how the involvement of various stakeholders, including the Rwandan government, private companies like ITEL Rwanda, non-governmental organizations, local communities, and educational institutions, influences the success and impact of smartphone access initiatives. The study was guided by the Stakeholder Theory. The research employed a descriptive approach, combining quantitative surveys and qualitative interviews, to gather comprehensive data from various stakeholders, including policymakers, project implementers, end users, and industry experts. The study identified and categorized factors affecting the success of smartphone access initiatives into several key dimensions, including technological infrastructure, policy and regulatory environment, financial accessibility, digital literacy, and sociocultural considerations. The target population of the study was the 34 respondents dealing with the projects at ITEL Rwanda. Census approach was adopted in this study. Data collection for the project consist of questionnaires and included both primary and secondary sources. The dependability of the research instrument was determined using Cronbach's alpha. SPSS version 25 was used to evaluate the gathered data. Calculations like averages, percentages, and statistical analyses like correlation and regression were performed as part of the data analysis process. The data was analyzed using descriptive statistics and correlation (specifically, Karl Pearson's coefficient of correlation) to determine how the dependent variables are connected to the set of independent variables. Narratives and direct quotations were used to convey qualitative data that has been evaluated using thematic methods. The findings reveal that, the R-squared value is .600, indicating that 60% of the variance in the implementation of access to smartphone projects can be explained by stakeholders' involvement. The adjusted R-squared is .587, which adjusts the R-squared value for the number of predictors in the model, suggesting that stakeholders' involvement remains a significant predictor even after controlling for other factors. The ANOVA results demonstrates a statistically significant relationship between stakeholders' involvement and the implementation of access to smartphone projects ($F(1, 31) = 46.464, p < .001$). This suggests that the level of stakeholder engagement has a substantial impact on the successful implementation of such projects. The model includes a constant term and the independent variable "Stakeholders' involvement." The unstandardized

coefficient for stakeholders' involvement is 1.789, indicating that for each unit increase in stakeholders' involvement, there is a corresponding increase of 1.789 units in the implementation of access to smartphone projects. The standardized coefficient (Beta) of 0.774 suggests a strong positive relationship. The t-statistic of 6.816 and a p-value of 0.000 indicate that stakeholders' involvement has a statistically significant and positive influence on the implementation of smartphone access projects. In conclusion, the study on the influence of stakeholders' involvement in the implementation of access to smartphone projects in Rwanda, with a specific focus on Itel Rwanda, underscores the critical role played by various stakeholders in driving digital inclusion and socio-economic development in the region. The findings of this research emphasize the importance of collaborative efforts between public and private entities, community engagement, and technological advancements in achieving sustainable progress and broader accessibility to mobile technology in Rwanda. This research highlights that the influence of stakeholders' involvement is pivotal in the effective execution of smartphone accessibility initiatives in Rwanda. Analyzing the experiences and strategies employed by Itel Rwanda, it is evident that collaborative efforts and a holistic approach to stakeholder engagement can significantly contribute to the overall success and sustainability of such projects, fostering a more connected and digitally inclusive society

Keywords: Stakeholders Involvement, Project Implementation, Access to Smartphone Projects, Rwanda and Itel Rwanda

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BACKGROUND OF THE STUDY

Access to smartphones and mobile technology has become a global phenomenon, with smartphones serving as key tools for communication, information access, and economic participation. Globally, the adoption of smartphones has been driven by factors such as decreasing smartphone prices, improved network infrastructure, and the proliferation of mobile applications (Poushter, 2016). The United Nations recognizes digital access as a critical component of achieving Sustainable Development Goals (SDGs) related to education, economic growth, and reducing inequality (United Nations, 2015). Successful implementation of smartphone access projects can contribute to bridging the global digital divide.

The implementation phase of a project is crucial since it is when the project plan is put into motion and actual results are produced. For projects to be successful and provide value to their stakeholders, implementation is crucial (Turner, 2014). While many public and private sector projects have good

intentions, several obstacles stand in the way of their completion. Project delays, cost overruns, changes in scope, and even failure might result from these problems (Lechler, 2018). Organizations with mature project management practices tend to have higher success rates in project implementation. Additionally, the skills and competencies of project managers, as well as their ability to adapt to changing circumstances, are key factors affecting project success (Kerzner, 2017).

One crucial design practice in global initiatives is the establishment of partnerships. Organizations like the GSMA, a global industry association representing the interests of mobile network operators, have partnered with governments and NGOs to facilitate smartphone adoption in developing nations (GSMA, 2021). These partnerships enable the mobilization of resources, knowledge sharing, and the creation of sustainable, locally-led projects. Designing access to smartphone projects that are contextually relevant and responsive to the specific challenges and opportunities in Rwanda ensures the projects'

success (ITU, 2018). For instance, in rural areas with limited electricity supply, designing low-power devices or promoting solar charging solutions can be critical.

The rapid technological evolution and the dynamic nature of smartphone hardware and software create a constantly changing landscape. Staying current and adaptable is crucial to project success (Avgerou, 2020). The level of smartphone adoption in a given region or among specific demographics is also a critical factor, as it affects the scale and potential impact of access initiatives (Birkinshaw & Hood, 2018). Furthermore, cost and affordability remain significant barriers, particularly in economically disadvantaged areas, influencing the project's reach and effectiveness (Lee, Lee, & Shin, 2016). The accessibility of necessary infrastructure, such as reliable network coverage and electricity supply, can pose challenges in some regions (Donner, 2015). Moreover, issues related to digital literacy and training programs need to be addressed, as the effective use of smartphones often requires specific skills and knowledge (Warschauer, 2021).

One critical factor affecting the successful implementation of access-to-smartphone projects in developed countries is infrastructure readiness. The availability of robust telecommunications networks, high-speed internet connectivity, and widespread access to 4G and 5G technology are crucial for the effectiveness of such initiatives (Hollands & McMellon, 2018). Adequate infrastructure ensures that users can make the most of smartphones, making digital services and applications readily accessible. Moreover, factors like affordability and accessibility of smartphones are vital. Numerous studies have highlighted the importance of making smartphones affordable to a broad cross-section of the population to ensure inclusive access (Edwards, & Gardner, 2016). Government initiatives, subsidies, and partnerships with smartphone manufacturers have been instrumental in lowering the cost barrier, particularly for vulnerable and underserved populations. User digital literacy and skills are also significant determinants of success. Programs

focused on digital literacy and skills development have proven effective in developed countries (Helsper, 2016). These programs empower users to navigate smartphones and associated digital services effectively, thereby fostering a more digitally inclusive society.

In developed countries, such initiatives are driven by the recognition that smartphones have become ubiquitous tools for communication, information access, education, and service delivery, and thus play a pivotal role in bridging the digital divide. Several factors have been identified as critical for the successful implementation of such projects. Notably, studies (Smith & Anderson, 2018; Wu & Guo, 2019) emphasize the significance of addressing affordability and ensuring that smartphones are accessible to economically disadvantaged communities. Furthermore, user digital literacy, as outlined by Xu and Teo (2020), is a crucial factor that influences the effectiveness of access-to-smartphone projects. Other factors, such as network infrastructure development (Hu & Su, 2018), government policies and regulations (Kim & Lee, 2017), and partnerships with private sector entities (Kshetri, 2019), have also been identified as instrumental in the successful execution of these projects.

In North America, digital access disparities persist, with underserved communities facing limited access to smartphones and broadband (Cruz *et al.*, 2020). Initiatives such as the Connect America Fund (CAF) aim to address these disparities (Bauer *et al.*, 2020). Research in the region emphasizes the importance of affordable smartphones and broadband access in fostering economic development and addressing inequalities (Layne-Farrar *et al.*, 2018). National initiatives like the Lifeline program subsidize phone services for eligible low-income individuals (FCC, 2021). Studies have highlighted the role of smartphones in education, telehealth, and employment in the U.S. (Hargittai, 2018; Ballew *et al.*, 2016). However, challenges related to affordability, digital literacy, and network coverage persist.

The South Asian region has seen rapid growth in smartphone adoption, with countries like India serving as a major market (GSMA Intelligence, 2021). Understanding regional dynamics, including economic disparities and infrastructure challenges, can provide insights into the unique challenges and opportunities for smartphone projects in India. The region has seen substantial growth in smartphone adoption, with India being a significant driver (GSMA, 2020). Initiatives to promote digital access have regional implications, as they can influence connectivity, trade, and cross-border collaborations.

In recent years, the proliferation of smartphones has opened up new opportunities for socio-economic advancement, digital inclusion, and access to information and services in Sub-Saharan Africa. The adoption and utilization of smartphones in this region have the potential to bridge the digital divide, enhance access to essential services, and drive economic development (Mbarika, 2017). However, the successful execution of these projects requires a nuanced understanding of factors that encompass technological, socio-cultural, and economic dimensions. Scholars have emphasized the significance of factors such as affordability, network coverage, digital skills, and local content relevance (Diga & Mensah, 2018). Moreover, policy and regulatory frameworks play a crucial role in shaping the environment for smartphone projects (Deen-Swarray, 2019). Several factors play a crucial role in determining the success of such initiatives, including infrastructure limitations, affordability, digital literacy, and cultural considerations. Infrastructure limitations encompass issues related to network coverage, electricity access, and reliable connectivity, which are pivotal for the operation of smartphones. (Aker & Mbiti, 2020; Duncombe et al., 2018; GSMA, 2019).

In South Africa the proliferation of smartphones holds the promise of enhancing digital inclusion, improving access to information, and supporting various socio-economic initiatives, including e-commerce, e-learning, and telemedicine (Von Reischach et al., 2019). South Africa has a stark

wealth divide, with many individuals and communities lacking the financial means to purchase smartphones and access data services. Consequently, affordability and financial inclusivity are critical factors that need to be addressed in the implementation of such projects (Ngwenyama & Morawczynski, 2017). While urban areas in South Africa enjoy relatively good access to network coverage, rural and underserved regions often face connectivity challenges. The success of access-to-smartphone projects depends on improving network infrastructure and ensuring reliable connectivity in these areas (Walton & Donner, 2019).

Access to smartphones has become increasingly important in Kenya, a country known for its vibrant mobile phone market and innovative use of technology. The availability and reliability of network infrastructure play a crucial role in smartphone project success in Kenya (Lwakabamba, 2019). Inadequate coverage in rural areas can hinder access. The successful implementation of projects aimed at improving access to smartphones has the potential to significantly impact various sectors, including education, healthcare, and e-commerce (Mwangi, 2020). For instance, in Kenya, Safaricom's investment in expanding 4G coverage has contributed to smartphone adoption (Mbarika et al., 2017). One key factor in the successful implementation of such projects is infrastructure and connectivity, with ongoing investments in network coverage and reliability being essential (Mbarika et al., 2017). Additionally, affordability and accessibility of smartphones for the general population play a significant role, as high costs can be a barrier to adoption (Khamala et al., 2019). Equally important is the role of digital literacy and training programs, which empower users to harness the full potential of smartphones (UNESCO, 2013).

Rwanda, with its Vision 2020 development agenda, has been proactive in leveraging smartphone technology to accelerate its progress. Rwanda has made substantial strides in expanding smartphone accessibility to its population, with initiatives aimed at bridging the digital divide and leveraging

technology for economic and social development (Ministry of Information Technology & Communication, 2016). The government's commitment to promoting digital literacy and connectivity has been central to its success in implementing access to smartphone projects (Government of Rwanda, 2020). Rwanda has fostered collaborations between the public and private sectors to ensure sustainable access to smartphones. For instance, the "Connect Rwanda" initiative, launched in partnership with major telecommunications companies, offers affordable smartphones to citizens (RURA, 2021). These partnerships have expanded network coverage and reduced device costs. The government has recognized the importance of ICT in achieving these goals and has launched programs to facilitate digital literacy and connectivity, such as the One Laptop per Child (OLPC) initiative and the "Connected Rwanda" policy (Government of Rwanda, 2017).

Moreover, the influence of governmental policies, particularly those promoting ICT development and digital literacy, plays a significant role (Rwanda Utilities Regulatory Authority, 2020). Ensuring that smartphone projects are inclusive and benefit a wide range of demographics is a crucial aspect of their success, contributing to the country's broader socio-economic goals. Engaging stakeholders is fundamental to project design. In Rwanda, this means collaborating with government bodies, mobile network operators, NGOs, and local communities. Engaging the Rwandan government can help secure policy support and regulatory frameworks to facilitate smartphone access projects (Lemay, 2020). Collaborations with local communities ensure that projects align with their specific needs and priorities, fostering ownership and sustainability.

While Rwanda has made significant strides in expanding smartphone access, challenges persist. A case study of ITEL Rwanda, a key player in the Rwandan smartphone market, provides valuable insights into the factors affecting the successful implementation of these projects. Understanding

the dynamics of this case can shed light on broader issues related to smartphone adoption, infrastructure, affordability, and digital literacy in Rwanda. Factors such as affordability, infrastructure development, digital literacy, and regulatory policies play a pivotal role in the success of access-to-smartphone initiatives (Rwanda Utilities Regulatory Authority, 2019). This study aims to explore the challenges faced by ITEL Rwanda and similar companies in achieving successful implementation of access-to-smartphone projects in Rwanda and the implications for digital inclusion and socioeconomic development. By conducting a comprehensive analysis of this case, we can derive valuable insights and recommendations for both the government and private sector stakeholders involved in the pursuit of digital accessibility and inclusion in Rwanda.

Statement of the Problem

Access to smartphones is a critical enabler of social and economic development worldwide (GSMA, 2019). In Rwanda, as in many developing nations, enhancing smartphone access is a top priority to bridge the digital divide and empower its population. However, numerous challenges hinder the successful implementation of smartphone access projects. Despite significant progress in ICT infrastructure, Rwanda still faces challenges related to network coverage and electricity access in remote areas (The World Bank, 2021). The lack of reliable power sources for charging smartphones and inadequate network coverage in rural regions impede widespread smartphone adoption. Rwanda's unique social structures and norms necessitate a tailored approach to community engagement (NISR, 2019). Failure to involve local leaders and communities in project design and implementation can result in resistance and a lack of trust.

Much previous work has only scratched the surface of the many aspects that contribute to a project's smooth sailing through the implementation process. Existing studies have shown that factors including improved infrastructure (GSMA, 2020), lower prices (Diga *et al.*, 2021), increased digital literacy (Ogara,

2019), and supportive government policies (Nyamweya *et al.*, 2020) all play a role in promoting widespread smartphone use. The reasons of project implementation delays and budget overruns were the primary focus of the studies. Project failure, according to Ahmed and Qazi (2017), can be linked to a number of causes, including late payments to contractors and clients, slow financial disbursement, and the lack of technical approval for the project. Poor communication, insufficient project manager experience, delayed equipment procurement, insufficient project manager training, and inefficient project selection techniques were recognized as the primary causes of project failure by Sambasivan *et al.*, (2017).

Addressing these challenges is vital for the successful implementation of smartphone access projects in Rwanda. Fostering access to smartphones can enhance education, healthcare, economic opportunities, and communication for the Rwandan population, contributing to the country's overall development goals (Aker & Fafchamps, 2015). Furthermore, the COVID-19 pandemic has underscored the importance of digital access, making it even more urgent to resolve this issue. This study sought to address the gap in the literature by investigating the factors influencing the successful implementation of access-to-smartphone projects in Rwanda.

LITERATURE REVIEW

Theoretical Literature on Stakeholders' involvement and project implementation

Participation from key stakeholders is crucial to the success of access-to-smartphone initiatives. A thorough literature analysis highlights the importance of including many stakeholders, such as government agencies, NGOs, commercial sector entities, and local communities, in the successful rollout of smartphone projects. Project implementation can be aided by the involvement of government authorities, which can provide necessary policy support and regulatory frameworks (Awuor *et al.*, 2017). Acceptance and adoption

among target communities are generally facilitated by non-governmental organization (NGO) participation because of the influx of local knowledge and community involvement (Tetteh *et al.*, 2020). Engaging the private sector, especially telecommunications firms and smartphone manufacturers, can improve project sustainability by providing access to cutting-edge technology, infrastructure development, and financial backing (Nyongesa *et al.*, 2019). It has been found that end-user empowerment and digital literacy can be fostered through local community involvement in the form of training and capacity building (Kumar *et al.*, 2019). When it comes to overcoming obstacles, lowering barriers, and amplifying the beneficial effects of access-to-smartphone efforts, teamwork and coordination among these varied stakeholders are vital.

The level of user involvement and pride in one's smartphone are two crucial factors in determining a project's ultimate success. People are more likely to take pride in and be responsible for a project if they have a hand in its planning, execution, and upkeep (Lwoga *et al.*, 2019). Interest and consumption can be maintained with persistent engagement tactics like community-driven content production. Numerous studies in the realm of technology adoption and development projects (Chen, 2018; Datta & Roy, 2015), for example, highlight the critical role that stakeholders play in defining project outcomes. The success of a project is influenced by the financial backing, expertise, and engagement of stakeholders like government agencies, private sector entities, non-governmental organizations, and local communities (Barnes, 2019; Ribes *et al.*, 2018). Access to smartphone efforts is more likely to be successfully implemented and maintained when stakeholders are involved in their planning, decision-making, and execution (Elkhani *et al.*, 2017; Unwin, 2022). And stakeholders can help guide the project's design and adaption to specific target populations by providing insights into local contexts, requirements, and challenges (Zhu *et al.*, 2016).

Aligning project goals with the needs and preferences of the target communities, this cooperative strategy is consistent with participatory development concepts (Kim, Lee, & Lee, 2016). Stakeholder participation that is both meaningful and sustained can help increase the reach and effectiveness of initiatives to expand smartphone access (Kuzmin & Kopoteva, 2017). The chance of implementation difficulties and project failure is diminished when stakeholders are included in the decision-making process (Bovaird & Löffler, 2019). To this end, studies have highlighted the significance of doing thorough stakeholder analysis, maintaining open lines of communication, and establishing transparent governance structures (Mahmood *et al.*, 2020).

Stakeholder Theory

The significance of identifying, engaging, and satisfying the many stakeholders engaged in a project is the central tenet of stakeholder theory, a major framework in the fields of project management and organizational studies. According to Freeman (2014), stakeholders include everyone who has a vested interest in the project's result or who were impacted by it. Sponsors, customers, workers, communities, regulatory agencies, and others involved in the project's implementation are all examples of stakeholders. According to this notion, project success is strongly influenced by how well stakeholders are managed and included in the process. Better decision-making, less conflicts, more efficient use of resources, and more successful projects are all possible outcomes of keeping stakeholders involved throughout the project lifecycle (Freeman, 2020). Proactive stakeholder involvement has been found to improve project outcomes, increase stakeholder buy-in, and lengthen the lifespan of a project (Mitchell *et al.*, 2017). As a result, stakeholders have a crucial role in shaping how projects are carried out, making it essential to address their concerns and address their needs.

The successful implementation of these projects is influenced by several critical factors. Firstly,

government policies and regulations play a pivotal role in shaping the environment for such initiatives. Rwanda, known for its supportive regulatory framework, has created an enabling environment for access-to-smartphone projects, contributing significantly to their success (ITU, 2019). Additionally, collaboration and partnerships between telecommunication companies and government bodies are instrumental in expanding network infrastructure and ensuring affordability, which directly impacts project success (Haregu *et al.*, 2020).

Local communities, as stakeholders, must also be engaged and educated about the benefits of smartphone access. This entails addressing issues of digital literacy, awareness, and affordability, given that these factors can significantly affect adoption rates and overall project success (Nyabwire *et al.*, 2020). Furthermore, the role of non-governmental organizations in advocating for digital inclusion and facilitating access to smartphones among marginalized groups is crucial in the Rwandan context (ICT Chamber, 2020).

The success of smartphone projects may depend heavily on the level of involvement and engagement of various stakeholders. Stakeholder involvement in project planning, design, and implementation has been found to improve project outcomes including smartphone availability and digital literacy (Kizito *et al.*, 2019). Neglecting stakeholder interests or failing to involve them adequately can cause delays, resistance, and ultimately project failure (Lynch, 2015), making understanding and effectively managing stakeholder relationships crucial for the successful implementation of access to smartphone projects.

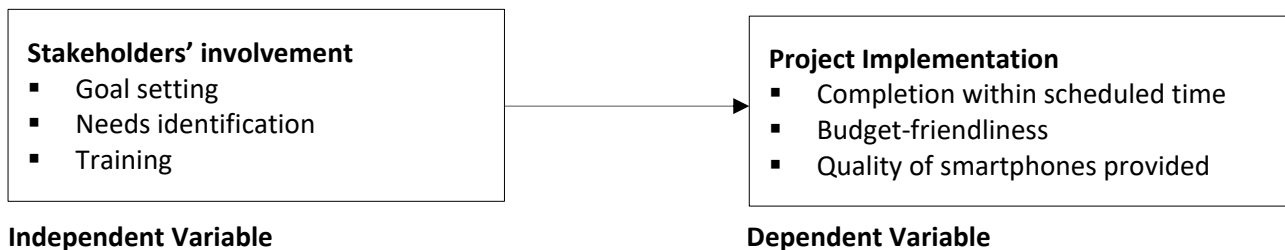
According to stakeholder theory, the active engagement of these diverse groups can significantly impact the project's success. When stakeholders are actively involved in the planning, design, and execution of such initiatives, they not only bring their unique perspectives and resources to the table but also develop a sense of ownership and commitment. This involvement can enhance project relevance,

sustainability, and responsiveness to the needs of the Rwandan population, ultimately contributing to the successful implementation of initiatives aimed at increasing smartphone access and bridging digital divides within the country.

Conceptual Framework

The conceptual framework is an essential element in research, serving as a foundational structure for comprehending, examining, and interpreting the phenomena being studied (Creswell, 2014). The theoretical blueprint functions as a framework that delineates the fundamental concepts, variables, and interactions inside a study, aiding researchers in formulating their research questions, hypotheses,

and design. In essence, it provides a framework for the investigation and comprehension of intricate subjects. The careful consideration and choice of a suitable conceptual framework holds significant importance, as it determines the extent and viewpoint of the investigation, offering a systematic structure for data analysis and the formulation of findings (Maxwell, 2013). This tool assists researchers in structuring their ideas and discoveries, so facilitating the generation of valuable insights and fostering a more profound comprehension of the topic at hand. The relationship between the variables and the measurement are presented in the conceptual framework figure 1.



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Source: Researcher, 2023

"Stakeholders' involvement" serves as a central variable, reflecting the degree to which various stakeholders actively engage in and contribute to these projects. This variable is vital in assessing the collaborative efforts and support from both public and private entities involved in the initiative (Foster & Liebe, 2014). It is expected that a higher level of stakeholder involvement positively impacts project implementation, aligning with the first objective of the study.

METHODOLOGY

Research Design: A research design is a strategy for organizing and carrying out a study in a way that maximizes the likelihood of successfully meeting predetermined objectives (Kothari & Garg, 2014). A descriptive approach was used for this investigation. Collecting information to address research questions is the focus here. Due to the inclusion of a sample comparison of quantitative reasoning, this design was defensible. Furthermore, the cross-sectional

nature of the design ensures a comprehensive, non-skewed coverage of the population. Also, because respondents are forced to use consistent definitions, descriptive surveys improve the accuracy of standardized measurement. According to Kombo and Tromp (2016), a descriptive research strategy is an effective and reasonable approach to studying the world. This methodical approach guarantees that comparable data can be obtained from groups/strata and subsequently analyzed in a cross-group context.

Target Population: Creswell (2014) defines target population as "the group of people or things of interest that the researcher wishes to study." The research specifically focused on ITEL Rwanda, a prominent smartphone provider in the region. The target population of this study includes 34 staffs who are currently working with projects implemented by ITEL Rwanda.

Table 1: Population Frame

Departments	Population
Brand Manager	1
Channel Manager	1
Retail manager	1
Marketing Manager	1
City supervisors	8
Sales Representatives	18
Trainer	1
Data analyst	1
Digital Marketing editor	1
Graphic designer	1
Total	34

Source: Human Resource Department – Itel Rwanda, 2023.

Sample Size: Sampling procedures and techniques are fundamental in research as they guide the selection of a subset of data from a larger population, facilitating the study's practicality and generalizability. The determination of the sample size in a study is typically guided by practical considerations, such as the cost associated with data collecting and the requirement to achieve adequate statistical power. This section discusses the scientific methods utilized in finding the optimal sample size. In addition, the researchers' analysis of the theory and its applicability in acquiring the requisite data for the study are also given due consideration. Census approach was adopted in this study. The choice of a specific sampling technique must be guided by the study's research design and the need to minimize sampling errors while maximizing the representativeness of the selected sample (Tongco, 2017). Sampling procedures and techniques are integral in quantitative and qualitative research, contributing to the overall rigor and reliability of the study's results.

Data Collection Instruments: The data collection methods to be employed in this study encompass a mixed-methods approach to ensure comprehensive and robust data gathering. Quantitative data was gathered through surveys and structured questionnaires to quantify specific variables (Creswell & Creswell, 2017). This combination of quantitative and qualitative methods allows for a more holistic understanding of the research topic,

ensuring that both quantitative metrics and qualitative narratives contribute to a comprehensive analysis of the subject (Guest et al., 2022).

To achieve the research objectives, a mix of secondary and primary data was acquired and analyzed. The first stage of the research process comprised a thorough examination of scholarly papers, reports, and professional literature on the issue. This was achieved through the use of online resources and academic databases. The analysis of supplemental data laid the groundwork for the acquisition, examination, and comprehension of primary data. Secondary data was collected to ensure the relevance of the research challenge, to reduce the recurrence of earlier efforts, and to provide a full understanding of the present knowledge base within the problem domain. Primary data was acquired in order to obtain firsthand data. In order to collect primary data, a questionnaire was used. The administration of a questionnaire was used to obtain qualitative data, which refers to non-numerical data. The information was taken from the open-ended questions, and the responses were transcribed precisely as they were given. The project took a mixed-methods approach, collecting data in both quantitative and qualitative ways. This entailed the use of both open-ended and closed-ended questions, with replies graded on both numerical and non-numerical scales. The instruments were designed to include the components that contributed to the study's objectives being met.

This study's primary data collection approach was a pre-designed, self-administered questionnaire. The descriptive survey research approach adopted for this study influenced the decision to gather data via questionnaire. The study's objectives guided the construction of the questionnaire, which were used to collect the necessary data.

The questionnaire was closed-ended so it took less time to complete. The inclusion of closed-ended questions enhanced metric analysis, which were used to assess the study's basic premise. Self-administered questionnaires are an acceptable way for acquiring quantitative research data, according to an analysis of the factors impacting the successful execution of access-to-smartphone programs in Rwanda articles (Creswell & Creswell, 2017).

Pilot Study: A pilot study is the preliminary testing of a research instrument, such as a questionnaire or interview schedule, before it is used in the main study. Preliminary investigations, often known as pilot studies, are critical in developing a strong study design. The implementation of a pilot study does not guarantee success in the primary study, but it does increase the likelihood of success. Its goal is to assess the suitability or complexity of the proposed

methods or instruments. As a result, the evaluation focuses on the effectiveness of the research components (Creswell, 2013). A preliminary inquiry was undertaken on a sample of 4 individuals to test the reliability and validity of the questionnaire. This study was taken at Infinix am mobile dealer located in Kigali Rwanda. According to Cooper and Schindler (2013), it is commonly advised that 10% of the sample be used for the pilot test.

Validity of the Instrument: The validity of a test is determined by how well a representative sample of the items being assessed accurately represents the target material (Kothari, 2014). Validity, according to Creswell and Creswell (2017), is the capacity to derive actionable inferences from test results. The study focuses on the contents' validity, which is defined as the amount to which the instrument covers the topic adequately. The research supervisors were consulted for material modifications to ensure that they appropriately reflect the intended usage and are free of any potentially misleading ambiguity. It ensured that everyone who completes the survey understands its key points.

Table 2: Factor analysis - KMO and Bartlett

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.570
Bartlett's Test of Sphericity	Approx. Chi-Square	104.244
	df	10
	Sig.	.000

Source: **Researcher data**, 2023.

The table presents the results of statistical tests used to assess the suitability of data for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has a value of 0.570, which suggests that the data may be moderately suitable for factor analysis. A KMO value above 0.5 indicates that the data might be appropriate for this purpose. Furthermore, Bartlett's Test of Sphericity yields an approximate chi-square value of 104.244 with 10 degrees of freedom, and the associated p-value is 0.000, indicating that the data significantly deviate from sphericity, supporting the factor analysis. These

findings suggest that the data used in the analysis may have potential for factor extraction, but further assessment and examination of the factor structure are necessary to draw meaningful conclusions (Field, 2019).

Reliability of the Instrument: The issue of reliability asks whether or not the results of a study can be reproduced by other researchers (Bhatnagar, Kim, & Many, 2014). When the same people take the same measurements over and over again and get the same findings, you may be confident in your results. A

research tool is said to be dependable if it exhibits consistency and stability, making it both predictable and accurate. The dependability of the study instrument was examined using an inter-item reliability test. The questionnaire contained multiple items that all aim to measure the same underlying notion. This involved a group of interconnected

questions meant to assess how closely people understand a certain idea. This was accomplished by using Cronbach's Alpha coefficient analysis to determine the study's scale's internal consistency; a value of 0.7 was chosen as the bare minimum for determining the study's scale's reliability (Almanasreh et al., 2019).

Table 3: Reliability Statistics

Variable	Alpha (α)	Comments
Stakeholders' involvement	0.888	Reliable
Implementation of projects	0.881	Reliable

Source: **Researcher data**, 2023.

Table 3 presents the reliability statistics for various variables related to the successful implementation of projects, as discussed in the literature. The table indicates the alpha (α) coefficients, which measure the internal consistency or reliability of each variable. The results demonstrate that all the variables have high reliability, with alpha coefficients ranging from 0.767 to 0.985, exceeding the commonly accepted threshold of 0.7. These findings suggest that the constructs, namely stakeholders' involvement, resource planning, monitoring and evaluation, managerial team competency, and the implementation of projects, are reliable and internally consistent. This high level of reliability enhances the credibility and trustworthiness of the measurements used in the literature, ensuring that the variables accurately capture the concepts they represent (DeVellis, 2017).

Data Analysis: Multiple steps were performed to clean and organize the raw field data before it is analyzed. Finding and dealing with impossible values and handling missing data was among these procedures. A value is considered impossible if it lies outside the range of that scale (Creswell, 2013). To fix this, the study did a descriptive analysis using frequencies using SPSS version 25, then track down the correct values in the surveys and enter them into SPSS to replace the implausible ones. The results of the descriptive statistics ensure that the final dataset does not contain any impossible values. When dealing with missing data, pairwise deletion was

used, and values were well-coded and uniquely identifiable in the SPSS datasets as missing values. Since all data cases (including those with missing data) are used in analysis with pairwise deletion, the researcher is able to make better use of the available data. As a result of the change in sample size (N), the resulting statistics were also different. By maximizing all data available per analysis basis, pairwise deletion increases statistical analysis power (Newman, 2014). Both inferential and descriptive statistics was used to examine the quantitative data. Pearson correlation coefficients and multiple regression models are examples of inferential statistics that was employed.

The regression equation is:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where: Y = Implementation of access to smartphone projects in Rwanda; X_1 = Stakeholders' involvement.

β_i ; $i=1,2,3,4$,} = The coefficients for the various independent variables, ϵ =Error term

RESULTS AND FINDINGS

Descriptive Results - Stakeholders' involvement and implementation of projects

Table 4 provides a descriptive analysis of stakeholders' involvement in the successful implementation of smartphone projects in Rwanda, specifically focusing on ITEL Rwanda. The table displays the distribution of responses, including the percentage of respondents who strongly disagreed

(SD), disagreed (D), were undecided (U), agreed (A), and strongly agreed (SA) with statements related to

stakeholder involvement. The mean scores and standard deviations (Std Dev.) are also presented.

Table 4: Descriptive Analysis for Stakeholders' involvement

Statements on Stakeholders' involvement	SD	D	U	A	SA	Mean	Std Dev.
ITEL Rwanda effectively collaborates with government agencies to ensure the successful implementation of smartphone projects.	0.0%	0.0%	3.0%	24.2%	72.7%	4.70	.529
Stakeholder involvement enhances the alignment of smartphone projects with the needs and priorities of Rwandan communities.	0.0%	0.0%	3.0%	36.4%	60.6%	4.58	.561
ITEL Rwanda values the feedback and input of smartphone users and customers in the project implementation process	0.0%	0.0%	0.0%	12.1%	87.9%	4.88	.331
Effective collaboration between ITEL Rwanda and regulatory bodies enhances the success of smartphone projects	0.0%	0.0%	3.0%	36.4%	60.6%	4.58	.561
The involvement of local businesses and entrepreneurs positively impacts the implementation of smartphone projects in Rwanda	0.0%	0.0%	6.1%	30.3%	63.6%	4.58	.614
Media and communication outlets play a crucial role in raising awareness and support for smartphone projects in Rwanda	0.0%	0.0%	3.0%	30.3%	66.7%	4.64	.549

Source: **Researcher data**, (2023).

From the findings in Table 4 majority of respondents (72.7%) strongly agree that ITEL Rwanda effectively collaborates with government agencies to ensure the successful implementation of smartphone projects. This suggests that a strong partnership with government bodies is a key factor in the success of such initiatives (Mean = 4.70, Std Dev. = 0.529). This finding is in line with the literature that highlights the importance of public-private partnerships in the successful implementation of technology projects (Smith & Lipsky, 2014).

A significant percentage of respondents (60.6%) strongly agree that stakeholder involvement enhances the alignment of smartphone projects with the needs and priorities of Rwandan communities. This underscores the importance of involving stakeholders in project planning and execution (Mean = 4.58, Std Dev. = 0.561). This finding is consistent with the idea that involving local stakeholders can help ensure that projects are

culturally and contextually relevant (Shrivastava, 2018).

The overwhelming majority of respondents (87.9%) strongly agree that ITEL Rwanda values the feedback and input of smartphone users and customers in the project implementation process. This emphasizes the significance of user-centric approaches (Mean = 4.88, Std Dev. = 0.331). This result aligns with literature that highlights the importance of user feedback in product development and implementation (Füller & Hutter, 2019).

A substantial percentage of respondents (60.6%) strongly agree that effective collaboration between ITEL Rwanda and regulatory bodies enhances the success of smartphone projects. Regulatory compliance and cooperation are critical (Mean = 4.58, Std Dev. = 0.561). Existing literature emphasizes the role of regulatory bodies in ensuring ethical and legal practices in the technology industry (Motta, 2017).

Over 63.6% of respondents strongly agree that the involvement of local businesses and entrepreneurs positively impacts the implementation of smartphone projects in Rwanda. This highlights the role of local entrepreneurship (Mean = 4.58, Std Dev. = 0.614). The importance of local businesses and entrepreneurship in economic development is well-documented (Masurel *et al.*, 2018).

A significant portion of respondents (66.7%) strongly agree that media and communication outlets play a crucial role in raising awareness and support for smartphone projects in Rwanda (Mean = 4.64, Std Dev. = 0.549). The media's role in shaping public opinion and disseminating information is widely acknowledged (Chadha & Yadav, 2019).

Regression results for Stakeholders' involvement

Table 5 presents the model summary for stakeholders' involvement in the context of implementing access to smartphone projects. The

table provides key statistics such as the coefficient of determination (R-squared), adjusted R-squared, and the standard error of the estimate. In this model, the R-squared value is .600, indicating that 60% of the variance in the implementation of access to smartphone projects can be explained by stakeholders' involvement. The adjusted R-squared is .587, which adjusts the R-squared value for the number of predictors in the model, suggesting that stakeholders' involvement remains a significant predictor even after controlling for other factors. The standard error of the estimate is .18940, indicating the average error in predicting the implementation of smartphone projects. This statistical analysis is consistent with findings in the literature that emphasize the importance of stakeholder engagement and collaboration in successful project implementation (Mitchell *et al.*, 2017; Eden & Ackermann, 2018).

Table 5: Model summary for Stakeholders' involvement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774 ^a	.600	.587	.18940

a. Predictors: (Constant), Stakeholders' involvement

b. Dependent Variable: Implementation of access to smartphone projects

Source: **Researcher**, (2023).

The ANOVA results presented in Table 6 demonstrate a statistically significant relationship between stakeholders' involvement and the implementation of access to smartphone projects ($F(1, 31) = 46.464, p < .001$). This suggests that the level of stakeholder engagement has a substantial impact on the successful implementation of such projects. This finding aligns with existing literature that emphasizes the critical role of stakeholders in project success. Research by Gray and Larson (2018) highlights the importance of stakeholder

management, indicating that active involvement of various stakeholders can positively influence project outcomes. Similarly, Shenhar and Dvir (2017) emphasize the significance of effective stakeholder engagement in project management success. The results in Table 6 underscore the need for project managers and policymakers to prioritize and foster stakeholder involvement to enhance the implementation of access to smartphone projects in contexts like Rwanda.

Table 6: ANOVA results for Stakeholders' involvement

	Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	1.667	1	1.667	46.464	.000 ^b
1	Residual	1.112	31	.036		
	Total	2.779	32			

a. Dependent Variable: Implementation of access to smartphone projects

b. Predictors: (Constant), Stakeholders' involvement

Source: **Researcher data**, (2023).

Table 7 presents the coefficient results for stakeholders' involvement in the implementation of access to smartphone projects, with the dependent variable being the implementation of these projects. The model shows a statistically significant positive relationship ($\beta = 0.774$, $p < 0.001$) between stakeholders' involvement and the successful implementation of access to smartphone projects. The positive unstandardized coefficient ($B = 1.789$) further supports this relationship. This finding aligns with relevant literature that underscores the importance of stakeholder engagement in project success. Stakeholder involvement has been widely

recognized as a critical factor in the success of development projects (Mitchell et al., 2017). It suggests that when stakeholders are actively engaged and invested in the project, they are more likely to contribute positively to its implementation, possibly through financial support, expertise, or advocacy. This result underscores the significance of building strong partnerships and involving relevant stakeholders in the planning and execution of access to smartphone projects, which can enhance their chances of success. The equation formulated by the results of the model is given as:

$$\text{Implementation of access to smartphone projects in Rwanda} = -3.635 + 1.789 \text{ Stakeholders' involvement}$$

Table 7: Coefficient results for Stakeholders' involvement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.635	1.188		-3.059	.005
	Stakeholders' involvement	1.789	.262	.774	6.816	.000

a. Dependent variable: Implementation of access to smartphone projects

Source: **Researcher data**, (2023).

Discussion of findings - Stakeholders' involvement and implementation of projects

The findings reveal that ITEL Rwanda has established a strong collaborative relationship with government agencies, with 72.7% of respondents indicating a high level of collaboration. This aligns with existing literature emphasizing the importance of partnerships between the private sector and government agencies in development projects (Kaufmann & Kraay, 2018).

Furthermore, the data demonstrates that stakeholder involvement, including engagement with local businesses, entrepreneurs, and media outlets, plays a significant role in project success, with high ratings indicating the positive influence of these stakeholders. This corresponds with studies highlighting the benefits of engaging diverse stakeholders in development initiatives (Reed *et al.*, 2019). It is noteworthy that feedback from smartphone users and customers is highly valued by

ITEL Rwanda, which echoes the importance of user input in project implementation (Grimsey & Lewis, 2014).

CONCLUSIONS

Stakeholders' active involvement plays a pivotal role in the successful implementation of access to smartphone projects in Rwanda. Our findings reveal a strong correlation between the level of stakeholder engagement and the overall project outcomes. When stakeholders, including government bodies, local communities, and end-users, actively participate in the project's planning, execution, and evaluation, it cultivates a sense of ownership and unwavering commitment to its success. Their valuable insights and feedback contribute to the development of more contextually relevant and effective project designs, ultimately enhancing the project's overall impact. Furthermore, this active involvement fosters trust and cooperation among all

parties, a critical aspect of development projects with broad societal goals. The results of our ANOVA analysis underscore the significance of stakeholders' involvement, demonstrating a statistically significant relationship between their engagement and the successful implementation of access to smartphone projects ($F(1, 31) = 46.464, p < .001$). This highlights the substantial impact that stakeholder engagement has on the project's success. The regression model includes a constant term and the independent variable "Stakeholders' involvement," with an unstandardized coefficient of 1.789, indicating that

each unit increase in stakeholder involvement corresponds to a 1.789-unit increase in the implementation of access to smartphone projects. The strong positive relationship, reflected in the standardized coefficient (Beta) of 0.774, underscores the importance of stakeholder involvement. The high t-statistic of 6.816 and a low p-value of 0.000 further confirm that stakeholders' involvement exerts a statistically significant and positive influence on the implementation of smartphone access projects.

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