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Consumer attitudes, social networks and technology usage: evidence from mobile banking users in Kenya.

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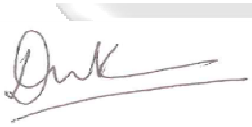
DECLARATION AND APPROVAL

I declare that this work has not been previously submitted and approved for the award of a degree by Strathmore University or any other institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Lydiah Kiburu



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ABSTRACT

The propensity of consumers to use technology to access services in recent times was heightened by the Covid-19 pandemic. This happened when human society was forced to enhance virtual consumer engagement (e.g. cashless banking) to prevent contamination and the spread of the virus. Extant literature examined how consumer attitudes towards technology was related to technology usage, but there was a lack of adequate knowledge on the contingency roles of social network ties. This study relied on social exchange theory (SET) and tie strengths theory to suggest that the extent to which perceived usefulness (PU) and perceived ease of use (PEOU) of technology were related to technology usage was dependent upon different levels of strong and weak social network ties. This argument was tested on primary data from 452 mobile banking users in Kenya and moderated regression analysis to test the conceptual model. Findings from the study showed that while strong and weak social network ties were associated with consumer technology usage, their boundary conditioning roles were demonstrated in the extent to which they strengthened the relationship between perceived usefulness and perceived ease of use of technology and technology usage. The findings from the study extend existing consumer technology usage literature in several ways. First, the study advances the existing literature by showing that consumer interactions within social networks explain when consumer attitude towards technology is associated with technology usage. Second, the study broadens scholarly perspectives on consumer technology usage by using primary data from Kenya: an under-researched context that brings new insights to understand the roles of social network ties in explaining consumer technology usage. Third, the study findings provide value for industry practitioners, policy makers and regulators in their efforts to accelerate the use of technology to access essential services. Limitations of the study included study of a technology in a single industry and single country context. Future research directions proposed include study of multiple technologies in multiple industries, comparative study of multiple country contexts as well as a longitudinal study to examine the effect of time on both the consumer attitudes, social networks and technology usage.

Keywords: *consumer interactions; mobile banking; social networks; consumer attitude; technology usage; Technology Acceptance Model; social exchange theory; tie strength theory*

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DEFINITION OF KEY TERMS

Consumer attitude

Consumer attitude is the feelings that consumer displays and which influence how such a consumer make decisions on whether to accept or reject any technology exposed to them for usage.

Technology acceptance model (TAM)

TAM is a leading theory in predicting user behaviour towards a technology. Davis (1989) derived TAM from the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) which are the oldest theories of human behaviour drawn from the study of psychology. TAM posits that users develop a positive attitude towards a technology when they perceive it to be useful and easy to use. TAM assumes that a person's adoption of a particular technology is influenced by their attitude towards the technology. TAM uses two key constructs, perceived usefulness (PU) and perceived ease of use (PEOU)

Perceived usefulness (PU)

PU is a key construct of the technology acceptance model (TAM). PU is defined as the degree to which a person believes that using a particular system would enhance his or her job performance.

Perceived ease of use (PEOU)

PEOU is a key construct of the technology acceptance model (TAM). PEOU is defined as the degree to which a person believes that using a particular system would be free of effort.

Social exchange theory (SET)

SET is a fast evolving theory which explains how social networks created by exchange relations influence decision-making. The theory was advanced by behavioural theorists to explain social exchange relations within social networks informed by the concept of

reinforcement, the reciprocal flow of valued behaviour among actors in a social exchange relation SET is a fast-evolving theory which explains how social networks created by exchange relations influence decision making. SET is used in this study to explain the exchange relations that flow in social network interactions and how the interactions influence consumers' attitudes towards technology and consumer technology usage.

Social networks

Social networks are made up of individuals or organizations linked together through relationships that facilitate the free flow and exchange of information and other resources. Actors in social networks are interconnected through relationships and ties that facilitate interactions and exchange through which they seek information that influence their behaviour

Tie strength

Tie strength theory suggests the existence of an interested exchange between parties. Tie strength is defined by the time spent in a relationship, intensity, intimacy and reciprocal services within a tie network. Two key constructs of the tie strengths theory include strong social network ties and weak social network ties. Actors in a strong social network tie relationship are characterised by homogenous traits such as the same level of information, reciprocity, trust, free flow and exchange of information which in turn influences their decision-making. Actors in a weak social network tie relationship are not closely knit and have few interactions compared to actors in a strong social network tie.

Consumer technology usage

This refers to the demonstrated willingness by consumers to embrace and use technology and use it to fulfil a need that improves their lives.

Frequency of consumer technology usage

Number of times a consumer makes use of a technology

Extent of consumer technology usage

This is the level to which a consumer uses of technology to perform a particular behaviour.

Computer aided personal interviews (CAPI)

CAPI is an interviewing technique in which the respondent or interviewer uses an electronic device such as mobile phone handset or a tablet to answer the questions. CAPI is classified as a personal interviewing technique because an interviewer is usually present to serve as a host and to guide the respondent.

LIST OF ACRONYMS AND ABBREVIATIONS

ATM - Automatic Teller Machines

AVE - Average Variance Extracted

CAK- Communication Authority of Kenya

CAPI - Computer Aided Personal Interview

CAT - Consumer Technology Acceptance

CBK - Central Bank of Kenya

CFA - Confirmatory Factor Analysis

CGAP- Consultative Group to Assist the Poor

DHS - Demographic and Health Surveys

DIT - Diffusion Information Theory

EAs - Enumerations Areas

eWom - Electronic Word of Mouth

FSD – Financial sector deepening

GPS- Global Positioning System

IS - Information System

KNBS- CSO- Kenya National Bureau of Statistics - County Statistics Officer

KNBS- Kenya National Bureau of Statistics

KPHC - Kenya Population Housing Census

MVNO – Mobile Virtual Network Operator

NACOSTI- National Council for Science and Technology

NASEP- National Survey Evaluation Program

OLS- Ordinary Least Squares

PAPI- Paper Aided Personal Interview

PEOU – Perceived ease of usefulness

PSP - perceived security privacy

PU – Perceived usefulness

RSE- Relative Standard Error

SET – Social exchange theory

SIPM - Social Information Processing Model

SU-IERC- Strathmore University – Institutional Ethics Review Committee

SMS- Short Message Service

SN- Subjective norms

SNS- Social Networking Sites

TAM – Technology acceptance model

TPB – Theory of planned behaviours

TRA- Theory of Reasoned Action

USA – United states of America

UTAUT - Unified Theory of Acceptance and use of Technology

VIF- Variance Inflation Factor

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It all starts and ends with the honour and glory of God. I enter His gates with thanksgiving. In the fullness of time, He has made this journey beautiful. There are several people who walked with me on this journey and made it possible to come this far; I owe them a huge debt of gratitude:

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At the proposal stage defence, my examiners, Prof Francis Kibera and Dr Stella Nyongesa gave this work very candid feedback. The corrections at that point created a strong foundation upon which this final dissertation was developed . My gratitude goes to them for setting me on a rigorous pace from the onset.

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DEDICATION

I dedicate this achievement to my late father, who was exceptionally proud of what we could all achieve. In your sleep baba, I have made an effort, and I have kept the promise. This work is now done, may your spirit be fulfilled. And to my darling Mami, your prayers have been a strong anchor always!

To my son Tito, I dedicate this to you for being the eyewitness of my daily nocturnal struggles of doing a PhD, while I was a full time working mother by day. May that experience give you some ideas about resilience and the audacity of determination! And to all your first cousins… may you all continue to be our blessings and be the best you can be, in the areas you desire, and may the Lord keep you, guard you and give you favour…Amen!

A special mention to baby Liam, you are special in our hearts, and when I did this, I had you in my mind, that the Lord will truly use you as His vessel, to exalt His name in many ways. I dedicate this to you darling baby boy!

Between this paragraph and the preceding paragraph, a lot happened. And I came back here to add this paragraph. My heart hurts deeply, but I believe that soon and very soon, you will come back to us, as your mother so wished. Surely, justice will be delivered in the fullness of time! If not from men, then from God Himself! God is faithful and He is watching over you and protecting you in the hands of those who don't really know you. Our love for you will never wane, whether you are near or far, you are part of us.

God will manifest Himself to the honour and Glory of His name, Amen.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

With increased integration of technology into people's daily lifestyle, its consumer usage has become a success indicator for firms that continue to invest in technology (Marangunić & Granić, 2015). Similarly, there has been a growing interest among scholars to explain the determinants of consumer technology usage (Baccarella et al., 2020; Ouyang et al., 2019; Venkatesh et al., 2003). At the same time, the extent and frequency of consumer technology usage is considered an important component of organizational strategy (Chau & Lai, 2009; Pavlou, 2003).

Consumer technology usage is often conceptualized as a behavioral manifestation and has therefore attracted scholarly attention from behavioral scientists as well as information systems researchers. According to Ajzen and Fishbein (1980), behavior can be explained by a person's attitude towards the specified behavior. Hawkins et al. (1998) similarly opined that consumer attitude refers to the way one thinks, feels and acts towards a given aspect of the environment, and suggests that attitudes are influenced by external and internal environment factors. From this behavioral perspective, a growing body of empirical studies has linked consumer attitudes to consumer technology usage (Cho & Chan, 2021; Drennan, 2010; Granić & Marangunić, 2019; Wedajo et al., 2019)

Scholars have argued that social structures are important in decision making because the individual acts a member of a social group and their interactions can lead to consumer engagement and increase loyalty (Bagozzi, 2007; Gebsombut & Ho, 2019). Furthermore, social networks promote interactions and exchange of information among actors in a network (Isa & Himelboim, 2018; Murendo et al., 2018; Wedajo et al., 2019). Social networks, as a determinant of consumer technology usage, has become a growing area of scholarly interest. According to Kate et al. (2010), an individual's trust, opinions and behavior are influenced by their social networks.

Studies have established that perceptions and beliefs that are communicated during social interactions have an influence on usage behavior (Chang et al., 2017; Di Pietro & Pantano, 2012; Hossain & de Silva, 2009). Studies on the influence of social interactions through social networks have been used to explain various behavioral outcomes in areas such as job performance (Park et al., 2020), employee turnover (Porter et al., 2019), innovation (Agyapong et al., 2017), unethical behavior (Ramakrishna Velamuri et al., 2017), entrepreneurship trends (Awa et al., 2016; Boso et al., 2013) and consumer technology usage (Wedajo et al., 2019). However, existing literature reveals that theoretical foundations, definitions, conceptualizations, and measurements of social networks have been varying, resulting in mixed and contradicting results which limit the ability to generalize such findings (Zhang & Benyoucef, 2016).

This study integrates social exchange theory (SET) (Cropanzano et al., 2017; Emerson, 1976) and tie strengths (Granovetter, 1977) to explain how social network interactions among consumers moderate their attitudes towards consumer technology usage. SET is based on social exchange between actors, and is characterised by interactions that generate obligations (Emerson, 1976). SET assumes that the outcome of the social interactions is based on a combination of the efforts of the partners in the interaction (Blau, 1964; Cropanzano & Mitchell, 2005). The theory's explanatory power lies in its three tenets: rules and norms of exchange, resources exchanged in an interaction, and the emergent relationships from such interactions which evolve over time into trusting, loyal and mutual commitments. SET has been used to study diverse areas such as social power, networks, board independence among others (Cropanzano & Mitchell, 2005). The theory is anchored on social exchange as the structural unit, as well as the principles of exchange interactions that emerge among specified actors (Emerson, 1976). The author identified a theoretical research gap in SET outside of experimental work, and argued for the need for more empirical studies using the theory outside the laboratory.

Tie strengths was theorized by Granoveter (1977, 1983). Although he left the precise definition of tie strength to future work, he characterized tie strengths into weak ties and strong ties. Research has continued to advance the theory of tie strength as an analytical framework for individuals and organisations (Gilbert & Karahalios, 2009). Granovetter (1977) theorized that the tie strength is a combination of the amount of time, the emotional intensity, the intimacy and the reciprocal services which characterize a relationship. The stronger the tie connecting two individuals, the more similar they were in various ways. In a similar concept, McPherson et al. (2001) opined that homophily is the homogenous nature of people's networks with regard to many socio-demographic, behavioural, and interpersonal characteristics. Homophily limits people's social worlds in a way that has powerful implications for the information they receive, the attitudes they form, and the interactions they experience.

The theory of tie strength was further advanced by Marsden and Campbell (1984) by proposing measures of tie strength as time spent in a relationship, the intensity, intimacy and reciprocal services within a tie. In advancing the concept of weak ties and strong ties, Granovetter (1977) argued that a person may have close friends in a closely knit group characterized by closeness, trust and common norms. Members of such a group are likely to have similar levels of information and to influence one another because of the level of the intensity of relationship and depth of intimacy and reciprocity. A member of such a strongly connected group may also have a friend or acquaintance in another group who may also be a member of another closely knit group. Rogers (1995) used the strength of ties to advance the theory of Diffusion of Information Technology and argued that one's perception of the system was influenced by the way people around the person evaluated the use of the system. At the nexus of TAM and SET, this study demonstrates the strength of cross fertilising the two theories to explain how individual consumer attitudes towards technology and technology usage is influenced by their social network interactions.

The technology acceptance model (TAM) is the dominant theoretical framework often used to predict consumer technology usage (Camilleri & Falzon, 2020; Davis, 1989;

Kamal et al., 2020; Kulviwat et al., 2007). TAM uses two key variables, perceived usefulness (PU) and perceived ease of use (PEOU), to measure consumer attitudes. While PU is defined as the extent to which an individual believes that using a system will enhance performance, PEOU explains the extent to which an individual believes that using the system will be relatively free of effort. TAM's popularity has also been attributed to its parsimony, meaning that the theory provides a simple explanation for technology acceptance. Secondly, as an information systems-specific theory, TAM provides adequate explanation of usage across a wide spectrum of users and a variety of technologies across cultures and geographies. Thirdly, TAM has a strong theoretical base with widely-researched and validated psychometric measures which are generalizable and, finally, the theory has strong empirical evidence for its overall prediction power (Ahmad, 2018; Sitorus et al., 2017).

TAM has been faulted for excluding subjective norms as a predictor of technology usage (Gupta & Yadav, 2017; Schepers & Wetzels, 2007). The argument has been that social norms are integrated in the outcomes and therefore cannot be treated as individual variables (Davis, 1989). Technology usage studies using TAM have largely focused on organizational settings to predict user acceptance of technology where the decision to use such technology is mandatory for employees, (Joo et al., 2018; Schepers & Wetzels, 2007; Shamsi et al., 2021). Additionally, TAM is conceptualized largely as a framework for explaining decision making by individual persons, yet decisions relating to technology usage are often collaborative with other people or groups (Bagozzi, 2007; Rogers, 1995). A key shortcoming of TAM, therefore, is its omission of social variables. Scholars have argued that human behavior is best characterized by a person acting as part of social structures, but not independently and in isolation (Bagozzi, 2007; Shirley & Todd, 1995; Venkatesh et al, 2003).

This study contextualised using evidence from mobile banking users in Kenya. Mobile banking has been defined as a technology capability using the mobile phone and telephony as a transactional channel to access banking services ranging from account balance enquiries, bill payments, funds transfers to stock exchange transactions

(Morawczynski, 2011; Suoranta & Mattila, 2004).

Mobile banking in Kenya was found to be an appropriate research context for this study because of the high rate of growth in mobile phone subscriptions, growth in internet subscriptions as well as increased consumer uptake of banking services in the country. Additionally, Kenya was ranked among the top give banking markets in Africa alongside Egypt, Morocco, Nigeria and South Africa (Dayi et al., 2022). The World Bank ranked Kenya as one of the countries in Africa with the highest increase in banking penetration between 2021 and 2022 with 79.2% after Mauritius 90.53% and South Africa 85.3%. (The Global Findex 2021, 2021) Essentially, Kenya had the biggest banking market in East Africa.

Despite the growth of the mobile banking technological dependencies i.e. mobile phone subscriptions and increased update of banking services, the growth of mobile banking usage was comparatively slow. For instance, according to the Communication Authority of Kenya 2020/21 report (2021), mobile telephone subscriptions grew to 64 million (135.4 per cent) compared to 57 million subscriptions (119.9 per cent) in 2019/20. Similarly, internet subscriptions increased to 46.7 million in 2020/21 compared to 41.5million in 2019/2020. At the same time, according to the Central Bank of Kenya annual report (2021), a total of 84 per cent of Kenyans were formally banked in 2021, an increase from 82.9 per cent in 2019. Out of this population, 23.8 per cent were using traditional banking services, a drop from 29.6 per cent in 2019, while a total of 34.4 per cent were using mobile banking, a growth from 25.3 per cent in 2019.This shows that acceptance and usage of mobile banking services was growing although not as fast compared to usage of mobile money services which stood at 81.4 per cent compared to 79.4 per cent in 2019.

The growth of mobile banking in 2019 was propelled by the challenges of Covid-19 pandemic which limited access to physical banking branches and discouraged the use of cash so as to reduce contamination. The foregoing data by the Central Bank of Kenya demonstrates that consumer usage of mobile banking technology by individual

consumers in Kenya was comparatively slow compared to the growth in usage of other related technology services such as internet subscriptions and mobile telephone subscriptions.

Acceptance and usage of mobile banking technology by individual consumers in less developed economies is noted to be comparatively slow compared to the growth in usage of other related technology services such as internet subscriptions and mobile telephone subscriptions (Van et al., 2020). The existing gap between the high investment in mobile banking technology by banks and the low usage by consumers, contradicts the growing innovation in mobile banking service by banks in Kenya. This situation is echoed by scholars who opined that the use of portable devices in banking services is still in its infancy and mobile banking adoption and usage was still low even within established markets (Shaikh and Karjaluoto 2015, Gómez-Barroso & Marbán-Flores, 2014; Mishra, 2010).

1.1.1 Consumer attitudes

Attitude is a crucial factor in the study of consumer behaviour (Babin & Harris, 2012). Kotler and Keller (2012) defined attitude as a person's enduring favourable or unfavourable evaluations, emotional feelings, actions and tendencies towards some object or idea. Consumer attitude as an explanatory variable for consumer behaviour has been studied by several researchers over the years. For example, Schiffman and Kanuk (2007) opined that attitude as a determinant of consumer behaviour is a learned inclination in behaving consistently in a positive or negative way towards a given object. According to Babin and Harris (2012), consumer attitude is the overall evaluation of objects, products, services, issues or people. On the other part, Hawkins et al. (1998) defined consumer attitude as the way one thinks, feels and acts towards a given aspect of his or her environment, and concluded that attitudes are influenced by external and internal factors. From the foregoing definitions, it can be concluded that consumer attitudes are the feelings that a consumer displays and which influence how such a consumer makes decisions on whether to accept or reject any technology exposed to them for usage.

Consumer attitude was the independent variable and was anchored by TAM, which is part of the wider cognitive approach in consumer behaviour. Cognitive approach started with the Fishbein models which posit that the overall attitude of an individual towards an object is derived from his beliefs and feelings about various attributes of the object (Ajzen et al., 2018; Fishbein, & Ajzen, 1975). Cognitive models have the advantage of use by many disciplines which have assisted in their conceptual development making it possible to borrow theoretical and methodological inputs (Jeff, 2008).

Measures of consumer attitudes using the cognitive approach are derived from the main behavioural theories: theory of reasoned action (TRA) and theory of planned behaviour (TPB). TAM used TRA and TPB as referent theories, used to specifically explain consumer attitudes towards technology (Davis, 1983). Perceived usefulness (PU) and perceived ease of use (PEOU) are the dominant constructs used to measure consumer attitudes using TAM. Perceived usefulness (PU) is defined as the extent to which an individual believes that using a system will enhance performance. Perceived ease of use (PEOU) is the extent to which an individual believes that using the system will be relatively free of effort. The dimensions of PU and PEOU were used to measure consumer attitude variable in this study.

1.1.2 Social networks

Social networks are made up of individuals or organizations (Larosiliere et al., 2017; Martins, 2016). Actors in social networks are interconnected through relationships and ties that facilitate interactions and exchange (Brass et al., 1998; Hoang & Antoncic, 2003; Larosiliere et al., 2017; Martins, 2016) through which they seek information that influences their behaviour (Kang & Namkung, 2016; Komito, 2011).

Individual perceptions of technologies are influenced by opinions, culture, norms, social contexts and behaviours of people they communicate with (Rogers, 1995; Salancik, 1995; Song, 2014). Research has shown that in voluntary conditions, social

networks influence consumer attitudes towards technology, and intention to use or towards actual technology usage (Bagozzi & Dholakia, 2002; Bagozzi & Lee, 2002; Dholakia & Talukdar, 2004). Studies have shown that interactions in social networks influence technology-related attitudes and psychological processes more, compared to objective and independent assessments of technical characteristics (Fulk et al., 1987; Lee et al., 2003). From the foregoing discussion, this study defines social networks as social linkages and interactions between individuals or organizations where members benefit from the exchange relationships, which in turn influence decision making and behaviour of the actors.

Reviewed literature revealed diversity in the conceptualization of social networks mainly due to lack of consensus by the many theories used to explain how social networks influence consumer technology usage. As seen on Table 1.1, the diverse approaches in the conceptualisation and operationalisation of social networks resulted in mixed findings and fragmentation. However, the evident increase of research interest in this area of study, and the fragmentation identified indicate the growing recognition of social networks as an important predictor of consumer technology usage.

1.1.3 Consumer technology usage

Over time, the concept of technology has evolved along with advancements in science, engineering and society. According to the Oxford English Dictionary (2021), technology is the application of scientific knowledge for practical purposes, especially in industry. Technology has also been defined as systematic, scientific, and engineering approach to problem-solving that involves the creation, utilization, and diffusion of knowledge and information, tools and techniques, and organizational and cultural arrangements for the transformation of society and its environment" (UNESCO, 2005). Similarly, technology has been described as the study of techniques, processes, and procedures used to develop and produce goods and services, or to solve problems" (MIT Technology Review, 2021).

Researchers have been concerned with understanding consumer technology usage as a way of coming up with improved approaches to the design, evaluation and prediction of

how consumers respond to new technological innovations. To date, scholars have not arrived at a standard definition of consumer technology usage. Selwyn (2016) defined technology usage as "the ways in which digital devices and digital media are used by individuals and groups to support their learning, teaching, research, communication, and entertainment activities" (p. 9). According to Rapp et al. (2013) technology usage refers to the range of online tools, platforms, and media that individuals and organizations use to communicate, share information, and conduct transactions with one another. Similarly, Oudshoorn, N., & Pinch, T. (2018) define technology usage as the practices and activities through which users engage with, adapt to, and shape technologies in everyday life. The authors argue that understanding the role of users in the co-construction of technologies is crucial for developing more inclusive and democratic technological systems.

Scholars of previous decades had also brought forth various definitions of technology usage. Dillon and Morris (1996) defined technology usage with reference to user groups' demonstrated willingness to use technology for the purpose it was meant for. The authors argued that technology usage by consumers is an outcome in a process through which users make decisions about a technology. Davis (1989) on the other hand described technology usage as a key indicator of success in any information system. Other scholars such as Rogers (1976) referred to technology usage as technology adoption, opining that it is the number of steps that a consumer follows from initial awareness of an innovation, attitude formation, and decision making about using the technology. From the various definitions from the foregoing authors, we define technology usage in this study as the consumers' willingness to embrace technology and use it to fulfil a need that improves their lives.

Dillon and Morris (1996) argued that there are two approaches in studying consumer technology usage. The first one is the psychology of users' approach which has largely been anchored on behavioural-based approaches that study human decision making in the context of acceptance and usage. Measures used by behavioural based models

include attitude, Perceived Usefulness (PU), Perceived Ease of Use (PEOU), subjective norms, behavioural intention, and perceived behavioural control (Ajzen, 1985; Ajzen & Fishbein, 1980; Davis, 1989). The second approach was championed by Rogers (1976) and involves the decision making process approach. According to Rogers (1976), adoption of a technological innovation is measured using a consumer adoption propensity, whose measures include relative advantage, compatibility, complexity, trialability, and observability. According to Goodhue and Thompson (1995), there exists a wide variation of actual technology system usage measures, making it hard for scholars to compare various research findings. System usage measures have broadly been categorized into two: objective computer recorded measures and subjective self-reported measures (Straub et al., 1995).

This study used actual technology usage as the dependent variable. Measuring actual usage of technology by individuals, groups or organisations is a key variable in information systems research (Straub et al., 1995). This study defined technology usage as the frequency and extent to which a consumer uses a specific technology for the intended purpose. Measures of usage for this study were adopted from previous studies that used frequency of usage (Cho & Chan, 2021), and extent of usage by consumers (Nayak et al., 2018) to operationalise the variable.

1.2 Mobile banking in Kenya

Access to financial services has been acknowledged as an important driver of economic development and social inclusion and has continued to receive growing attention from policy makers around the world in the last decade (Amrik & King, 2015). Kenya's Vision 2030, the national development strategy identifies the financial services sector as a key driver of national development (Kenya Vision 2030, 2022; Ndung'u et al., 2011). The vision of the strategy is to create a vibrant and globally competitive financial sector and decrease financial exclusion from 85 per cent to below 70 per cent by the year 2030. The banking sector, a key player in the financial sector in Kenya, has played a key role in broadening access to financial services mainly through technological innovations thereby reducing the cost of delivery (Amrik & King, 2015).

As at December 31, 2021, the Kenyan banking sector comprised the Central Bank of Kenya (CBK) as the regulatory authority, 38 Commercial Banks, one Mortgage Finance Company, one Mortgage Refinance Company, 9 Representative Offices of foreign banks, 14 Microfinance Banks (MFBs), 3 Credit Reference Bureaus (CRBs), 17 Money Remittance Providers (MRPs), 8 non-operating bank holding companies and 68 foreign exchange (forex) bureaus. Out of the 40 banking institutions, 37 were privately owned while the Kenyan Government had majority ownership in 3 institutions. Of the 37 privately owned banks, 22 were locally owned (the controlling shareholders are domiciled in Kenya) while 15 were foreign owned. The 22 locally owned institutions comprised 21 commercial banks and one mortgage finance company. Of the 15 foreign-owned institutions, all were commercial banks with 12 being local subsidiaries of foreign banks and 3 were branches of foreign banks. All were licensed forex bureaus, microfinance banks, credit reference bureaus, money remittance providers, non-operating bank holding companies and a privately owned, some were locally owned and others were foreign owned (Central Bank, 2021). This study focussed on the commercial banks as listed by the Central Bank of Kenya.

Between 2000 and 2012, the banking sector underwent a significant transformation process driven mainly by a liberalized regulatory environment; this enabled the sector to increase its depth, stability and access (Amrik & King, 2015). During this period, the Central Bank of Kenya enabled the banking sector to establish agency banking on the backbone of technological innovations. Bank agents were thus able to use mobile phones to deliver banking services to customers through a third-party banking franchise model. According to FinAccess (2021), formal financial inclusion measured by access expanded to 83.7 per cent in 2021 from 82.9 per cent in 2019. In the same period, mobile banking accounts increased to 34.4 per cent in 2021 from 25.3 per cent in 2019, while consumers who used physical banking branches declined from 29.6 per cent to 23.8 per cent in 2021.

Innovation of using mobile phones to perform financial transactions was pioneered by

Safaricom with the introduction of M-Pesa in 2007 (Jack & Suri, 2011). However, the service is not regulated by the Central Bank of Kenya but by the Communications Authority of Kenya; indicating that the bank regulatory framework does not consider mobile money services as a banking service. Pioneer researchers on mobile banking usage in Kenya interchanged the terms mobile money and mobile banking (Kimenyi & Ndung'u, 2009; Okiro & Ndungu, 2013). By 2018, CBK was still reporting mobile money and mobile banking transactions together (CBK, 2018). However, FinAccess (2019) differentiated mobile money and mobile banking definitions in their national household survey in Kenya.

This study focussed on mobile banking as the channel of banking access where a customer links their bank account to their mobile telephone line to access banking services. The benefits of mobile banking have been cited as increasing sales volumes, reducing distribution costs, increasing customer satisfaction, as well as a brand building strategy because it attracts more technology savvy customers (Kenya Bankers Association, 2014).

As a result of the penetration of mobile phones in Kenya, banks began to venture into the use of mobile phones as a distribution channel for banking services. According to Amrik and King (2015), Cooperative Bank was the first to introduce the service in 2004 by enabling their customers to perform balance enquiries, mini statements, short text message alerts on credit and debit transactions as well as payment of utility bills and funds transfers. Other banks that followed in rolling out mobile banking included: Equity Bank, Standard Chartered Bank, and Barclays Bank of Kenya which later rebranded to Absa.

In 2015, Equity Bank took mobile banking innovation to a higher level by partnering with Airtel to launch Equitel, a Mobile Virtual Network Operator (MVNO) that would provide bank customers with sim cards to enable them carry out mobile banking transactions. In 2019, the Communications Authority of Kenya declared that Equitel was not a mobile money service and removed it from its regulatory regime arguing that

it was a banking product (Wainanah, 2020). Similarly, Commercial Bank of African (CBA) partnered with Safaricom in 2012 to create a mobile bank account, making CBA the biggest bank in Kenya in terms of customer base with over 50 per cent of all bank accounts in Kenya (Central Bank of Kenya, 2016).

Mobile banking services is dependent on mobile telephony subscriptions by consumers which stood at 52 million in 2019, exceeding 100% penetration rate in Kenya (CAK, 2019). As seen in Appendix 8, most large banks in Kenya had large proactive presence on social media which was utilised for engaging with their customers and the general public. In addition, banks also had networking forums and membership clubs as platforms for customer networking in order to optimise the social capital arising from such communities of interest in their sales and marketing efforts. Banks' recognition of the importance of social networks was also evident in their product classification such as youth products, women's products, farmers' products among others. In 2016, when Chase Bank Ltd was put under receivership, the CBK issued a press release which listed one of the reasons the bank had experienced liquidity difficulties as "inaccurate social media reports and the stepping aside of two of its directors. Consequently, the Bank was not able to meet its financial obligations on April 6, 2016" (Central Bank, 2016, para 4). In summary, the growing innovation by banks in the provision of mobile banking provided an appropriate context for this study

1.3 Research problem

Studies have found that perceptions and beliefs that are communicated during social interactions have an influence on usage behaviour (Hossain & de Silva, 2009; Kang et al., 2021; Wong et al., 2020). Literature on the influence of social network ties on human behaviour has continued to gain ground in areas such as education (Deepak et al., 2016; Gruzd et al., 2018; Lee & Cho, 2017; uz Zaman et al., 2019), entrepreneurship (Batjargal et al., 2013; Eggers et al., 2017; Martins, 2016), insurance (Cai et al., 2015) and job performance (Agarwal & Karahanna, 2000; Magni et al., 2012b; Nayak et al., 2018; Zhang & Venkatesh, 2013). However, despite the existence of such a large pool of studies, scholarly works have not adequately addressed the

conditioning role of social network interaction in explaining the extent to which consumer attitudes towards technology influence technology usage (Algesheimer & Wangenheim, 2006; Bagozzi, 2007; Gong et al., 2020; Mathieson, 1991; Rosenblatt, 2013).

With the increased integration of technology into people's everyday lifestyles, the extent of consumers' usage of technology has become a major driver of return on technology investment (Marangunić & Granić, 2015). The role of social network ties in influencing consumer attitudes towards technology and technology usage is becoming an important area of study. Further, Kate et al. (2010) argue that an individual's trust, opinions and behaviour are influenced by their social networks.

In addition, existing studies differ in their conceptual approach to the relationship between consumer attitude, social networks and consumer technology usage. Extant literature has largely focused on testing behaviour intention which is a different variable from actual consumer technology usage. Some scholars have argued that behaviour intention is a strong predictor of actual behaviour (Camilleri & Falzon, 2020; Kamal et al., 2020; Rafique et al., 2020; Venkatesh et al., 2003) while others focussed on measuring actual usage (Adams et al., 1992; Amoroso & Hunsinger, 2009; Davis, 1989; Kang & Namkung, 2016; Karahanna & Straub, 1999; Shirley Taylor & Peter A. Todd, 1995). Others scholars such as Bagozzi (2007) argued that behaviour intention is not as accurate as actual usage may not necessarily translate into actual usage because of psychological and instrumental processes that take place between the time intention is formed in the mind of a consumer, to the time action is initiated.

Scholars have also argued that while extensive studies exist explaining consumer technology usage, such studies have hardly considered the influence of social networks in the relationship between consumer attitudes towards technology and consumer technology usage (Bagozzi, 2007; Gong et al., 2020; Mathieson, 1991; Rosenblatt, 2013). Lack of a standardised operationalisation of variables in the study of social networks has also led to different measures and outcomes (Marsden & Campbell, 2012;

Zhang & Benyoucef, 2016)

Contextually, the banking sector in Kenya had adopted technology to support cutting edge innovation in mobile banking services (FSD Kenya, 2016). Despite the growth of mobile phone subscriptions and banking penetration, the growth of mobile banking usage was comparatively slow regardless of the fact that adoption of technology had rapidly increased between 2019 and 2021 as more consumers adhered to Covid-19 restrictive measures that accelerated consumer technology usage (Communications Authority of Kenya, 2021).

Literature review revealed that scholars in Kenya had considered the role of mobile money services with less literature attending to mobile banking service (Kimenyi & Ndung'u, 2009; Okiro & Ndungu, 2013). Furthermore, studies explaining the relationship between consumer attitudes, social networks and mobile banking usage in Kenya were very few (Lule et al., 2012). This empirical situation called for more studies explaining how consumer attitudes and social networks influenced consumers' mobile banking usage.

Extant literature at global, regional and local levels revealed either contradictory results or mixed findings. Some studies focussed on the direct relationship between consumer attitude and technology usage (Alfadda & Mahdi, 2021; Camilleri & Falzon, 2020; Singh & Srivastava, 2019) while others studied the direct relationship between social networks and technology usage (Deepak et al., 2016; Eggers et al., 2017; Nayak et al., 2018). Few studies focussed on the effect of social networks on the relationship between consumer attitudes towards technology and technology usage (Murendo et al., 2018; Wedajo et al., 2019; Young & Ready, 2015).

Globally, Cai (2015) used data from a randomized experiment in rural China to study the influence of social networks on weather insurance adoption among rice farmers. To quantify network effects, the experiment provided intensive information sessions about the insurance product to a random subset of farmers. For untreated farmers, the effect

of having an additional treated friend showed increased uptake of the weather insurance premium because of influence of their purchase decision by their friends. The experiment showed that the network effect was driven by the diffusion of insurance knowledge while influenced the purchase decisions.

Hossain and De Silva (2009) studied social networks' influence on consumer technology usage in the USA and found that network ties influenced consumers' acceptance and usage of technology. The study focussed on social networks but did not consider consumer attitude as a determinant of usage. Lee et al. (2003) examined the impact of user attitude and social networks in determining consumer technology usage in distance learning in the United States of America (USA). The study measured intention (and not actual usage) to use technology as the dependent variable and found that users' intention to use technology was influenced by their social networks. While the study focused on students in a mandatory setting, the current study examined actual usage as the dependent variable in a voluntary setting among mobile banking consumers.

Straub et al. (1997) compared technology usage in different cultures in Japan, Switzerland and USA by studying employees' use of email technology in three different airlines. The results showed that factors outside consumer attitude (in this case, culture) influenced technology usage. The study concluded that culture, which is a variable outside TAM, was a key determinant of consumer technology usage, demonstrating a theoretical weakness of using TAM on its own to explain consumers' attitude towards technology usage. The current study integrated TAM and social network theories (SET and tie strength theories) to increase the predictive power of TAM in explaining consumer technology usage.

At the regional level, Wedajo et al., 2019 explained the roles of an indigenous community social network in influencing agricultural technology uptake by rural farmers in Ethiopia on the basis of social capital, trustworthiness, altruism and with no self-centeredness. The study brought out the role of social networks in explaining

consumer technology usage. This study went further test the moderating role of social networks on the relationship between consumer attitudes towards technology and technology usage.

Murendo et al., (2018) analysed social network effects on the adoption of mobile money among rural households in Uganda and concluded that mobile money adoption was positively influenced by the size of the social network with which information was exchanged. The study did not study consumer attitudes towards technology usage. Chitungo and Munongo (2013) set out to establish how applicable the extension of TAM would be in determining the relationship between intention to adopt and actual adoption of mobile banking services among unbanked rural communities in Zimbabwe. The findings showed that extension of TAM could improve its prediction of consumers' intention to adopt mobile banking. Specifically, besides TAM's constructs (PU and PEOU), other factors that were found to influence users' attitude included personal innovativeness, relative advantages and social norms. The study used intention to adopt technology as the dependent variable while this study measured actual technology usage.

In Pakistan, Glavee-Geo, Shaikh, and Karjaluoto (2017) explored the variables that would influence an individual's intention to use mobile banking and found that perceived behavioural control and attitudes towards mobile banking usage had a positive influence on behaviour intentions. Gender differences were found to moderate subjective norms' (SN) influence on intention to use. The authors focused on behaviour intentions and anchored the study on Theory of Planned Behaviour (TPB) while this study anchored consumer attitudes on TAM and tested the moderating influence of social networks on consumer attitudes towards technology and technology usage.

In Malaysia, Amin and Ramayah (2010) investigated the relationships between the intention to use Short Message Service (SMS) banking one hand, and attitude, subjective norm, and perceived security privacy (PSP) on the other. Findings indicated that attitude, subjective norm, and PSP were significant in explaining intention to use

SMS banking. While the author studies SMS banking and measured behaviour intention, this study focussed on mobile banking and measured actual usage.

Few studies in Kenya have attempted to establish how social networks impact consumers' mobile banking usage (Kimenyi & Ndung'u, 2009; Micheni et al., 2013; Ngugi et al., 2010). Although the authors interchanged the terms mobile money and mobile banking, the studies focused on the adoption of mobile money services provided by telecommunication operators.. Lule et al. (2012) used TAM to study the factors that influenced the adoption of MKesho, a mobile banking service in Kenya. The study contended that PU, PEOU, Perceived Self Efficacy and Perceived Credibility had significant influence on customers' attitudes towards usage of mobile banking. The authors used consumer attitude as the dependent variable. This study tested the moderating influence of social networks on the relationship between consumer attitudes towards technology and technology usage.

The foregoing studies show various research gaps which differ in their conceptual approach to the relationship between consumer attitude and consumer technology usage. Most studies focused on testing behaviour intention and not actual usage of technology by consumers. The attempt to extend TAM theory indicates that the theory does not adequately explain consumer technology usage. Social networks as a determinant of technology usage is still a growing area of research which has not been adequately researched in the Kenyan context.

The context of the foregoing discussions showed existence of very few studies in Kenya which had considered consumers' usage of mobile banking as the unit of analysis (Kimenyi & Ndung'u, 2009; Lule et al., 2012). As a result, this study was conceptualised to address the identified conceptual, methodological and contextual research gaps by assessing the relationship between consumer attitudes, social networks and consumer technology usage using empirical evidence from mobile banking users in Kenya. This study was guided by the following research question: what is the relationship between social networks, consumer attitudes, and consumer technology

usage? The study was contextualised using mobile banking usage among consumers in Kenya.

1.4 Objectives of the study

1.4.1 Main objective

The main objective of the study was to explain under what social networking conditions that consumer attitudes towards technology was related to consumer technology usage

1.4.2 Specific objectives

Specifically, the study sought to:

i. Determine the effect of consumer attitudes towards technology and consumer technology usage among mobile banking users
ii. Establish the effect of social networks on consumer technology usage among mobile banking users; and
iii. Establish the moderating effect of social networks on the relationship between consumer attitudes towards technology and consumer technology usage among mobile banking users.

1.4.3 Research questions

From the above research objectives, the study sought to answer three related research questions:

i. What is the effect of consumer attitudes towards technology and consumer technology usage?
ii. What is the effect of social networks on consumer technology usage?
iii. What is the moderating effect of social networks on the relationship between consumer attitudes towards technology and consumer technology usage?

1.5 Significance of the study

The findings of this research contribute to empirical, theory, policy and practice in consumer behaviour studies by addressing the relationship between social networks, consumer attitudes, social networks and consumer technology usage.

Empirically, this study contributes to knowledge on the role of social networks in conditioning consumer attitudes towards technology and consumer technology usage from an emerging markets context. Kenya is a leading country in financial services innovation and has made major breakthroughs in technology-led banking. In addition, financial inclusion is a key development indicator in the country's development strategy.

However, there is still inadequate research work particularly on mobile banking usage by individual consumers. Practitioners will find this study insightful in understanding how social networks influence consumers' technology usage. The findings provide insights for marketing managers in their design of marketing strategies to embrace social networks as the new frontier in reaching new consumers and converting them to users of new technological innovations such as mobile banking. In addition, the study findings provide new dimensions that are instrumental in technology design and development in order to meet the needs and expectations of consumers.

Theoretically, the study contributes to marketing theory development by integrating social networks and consumer attitudes to explain technology usage. The findings make an important empirical contribution by creating a framework for the study of consumer behaviour by integrating three theories: TAM, an information systems theory, SET and tie strength theories from behavioural studies to explain consumer technology usage behaviour.

The study provides insights to regulators on the importance of developing and enhancing policies on consumer technology usage, information exchange through social networks as a way of protecting consumers from being influenced using unverified information. A case in point was the Covid-19 pandemic where governments and health authorities constantly advised communities to observe social distance and avoid contamination, and encouraged the use of technology-driven services. Such situations further demonstrated the need for policies to guide design and

development of technology services and the provision of the right information to guide the consumers in their decision making and usage as well as consumer protection laws.

1.6 Scope of the study

This study was limited to investigating the relationship between social networks, consumer attitudes, and consumer technology usage among mobile banking users in Kenya. Three theoretical perspectives were integrated to explain the relationships in the conceptual model: technology acceptance model (TAM), social exchange theory (SET) and ties strength theory. The geographical scope was limited to consumers of mobile banking in Kenya. Mobile banking consumers were defined as those who had linked their mobile phone numbers to their bank accounts and used their mobile phones to carry out banking transactions. Finally, the methodology was limited to quantitative approach with the data collection taking place between June and July 2021.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews both theoretical and empirical literature relevant to the study. First, theories underpinning the key variables of this study are discussed based on existing literature. The next section critically reviews existing empirical literature on each of the study variables, where convergence and variations in the views of the various scholars are brought out.

Existing theoretical, conceptual and empirical gaps are identified in the reviewed literature thus supporting the research problem of the current study, and forming a justification for the proposed hypotheses. The third section of the chapter focuses on the conceptual framework which has been used to present the hypothesized relationships of the variables and the hypotheses paths. A summary section concludes the chapter.

2.2 Theoretical foundations of the study

This study examines the relationships between social networks, consumer attitudes and consumer technology usage. Technology acceptance model is used to anchor the consumer attitudes variable, while social exchange theory (SET) and tie strength theory are used to underpin the social networks variable.

2.2.1 Technology acceptance model (TAM)

TAM was advanced by Davis (1989) who posited that psychological factors influence information technology adoption and usage among employees in the workplace. Over time, the theory evolved to predict technology acceptance and usage in different situations beyond the workplace. The theoretical model assumes that a person's adoption of a particular technology is influenced by that person's attitude towards the technology (Ajzen et al., 2018). TAM uses two key constructs, perceived usefulness (PU) and perceived ease of use (PEOU).

TAM is part of the larger cognitive theory which is made up of learning models including Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Technology and Social Cognitive Theory. TAM is based on cognitive psychology, a study of complexities of mental reactions that are involved in the processing of information (Babin & Harris, 2012). According to Hawkins et al. (1998), cognition is a component of attitude which refers to beliefs by a consumer about a specific attribute or overall object. Cognitive theory assumes that cognition can be monitored and altered, and that it also affects behaviour (Mittal et al., 2008).

Davis (1989) derived TAM from the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)\, which are the oldest theories of human behaviour drawn from the study of psychology. Because of its specific focus on technology usage, TAM has become a dominant theory in explaining determinants of human behaviour towards usage of technology (Cho & Chan, 2021; Joo et al., 2018). TAM's popularity in explaining technology acceptance and usage has been attributed to its parsimony, meaning that the theory provides simple explanation for technology acceptance and usage (Sitorus et al., 2017). As an information systems' specific theory, it provides adequate explanation of usage across a wide spectrum of users and a variety of technologies across cultures and geographies (Rafique et al., 2020). In addition, it has a strong theoretical base with widely-researched and validated psychometric measures which are generalizable. Furthermore, the theory has strong empirical evidence for its overall prediction power (Yousafzai et al., 2007).

Despite being a popular theory in predicting technology usage, TAM has been critiqued for its shortcomings. Despite using TRA and TPB as referent theories, the theory excluded subjective norm as a predictor of technology usage (Schepers & Wetzels, 2007; Shamsi et al., 2021), arguing that social norms were integrated in the outcomes and therefore could not be treated as individual variables (Davis, 1989). Davis further argued that attitude in work settings were not necessarily a key driver of usage because as long as the employer had decided to deploy a technology, the employees had no choice but to use it. In such mandatory environments, attitude had no role to play in

predicting usage (Davis et al., 1989). In voluntary situations, Davis (1989) argued that any technology which a user found easy to use endeared itself to such a user who would in turn develop a positive attitude towards using it. The author further argued that PU and PEOU were very strong predictors of behaviour and all factors not directly included in the model could be explained by the two variables (Davis, 1989).

While TAM has become a legacy model applauded for its strength in parsimony, there exists numerous studies extending it with the intention of enriching its predicting power of technology usage (Ahmad, 2018; Bagozzi, 2007; Rahimi et al., 2018). TAM's relationship path from PU and PEOU to behaviour through behaviour intention has been criticized by some scholars as not necessarily acceptable, especially in social science research. This is because of the various steps between the time intention is formed in the mind of a consumer and the time that consumer initiates action (Bagozzi, 2007). In line with the foregoing argument, this study measured a direct relationship between PU and PEOU to consumer technology usage without going through behaviour intention.

Further, TAM has been faulted for opining that an individual's decision is solely influenced by their own personal attitudes. On the contrary, scholars have argued that human behaviour is best characterized by a person acting as part of social structures, but not independently and in isolation ((Bagozzi, 2007; Shirley Taylor & Peter A. Todd, 1995; Venkatesh et al., 2003; Wedajo et al., 2019; Young & Ready, 2015). To address TAM's omission of social interactions and their influence in technology usage, this study introduces SET to explain the social networks as an independent variable and its relationship with consumer attitude in predicting consumer technology. SET was preferred in this study because of its ability to explain the influence of information exchange during social interactions on decision making and behaviour among the actors in a social network environment (Cai et al., 2015; Cropanzano et al., 2017; Cropanzano & Mitchell, 2005; Peng & Mu, 2011).

2.2.2 Social exchange theory (SET)

SET is based on the early philosophical and psychological orientations of utilitarianism and behaviourism. Early advancements of the theory can be traced to Firth (1967) in his view that social relations dictated the content and form of a transaction. The theory was advanced by behavioural theorists to explain social exchange relations within social networks informed by the concept of reinforcement (Emerson, 1976). Other scholars who hold this view pay special attention to the reciprocal flow of valued behaviour among actors in a social exchange relation (Burt, 1997; Cengiz, 2006; Homans, 1958; J. Lee et al., 2019; Murendo et al., 2018). SET is a fast evolving theory which explains how social networks created by exchange relations influence decision making. According to Cook, Cheshire, Rice, and Nakagawa (2013), SET's framework for the analysis of multiple social processes is crucial to sociological studies.

Bagozi (1975) classified exchange into three broad categories: restricted, generalized and complex relations. He defined restricted exchange as the reciprocal exchange between two actors such as a retailer and a consumer. Generalised exchange was defined as a situation where more than three actors in a system exchange amongst each other, while in a complex exchange, a value chain of open-ended sequences of direct exchange take place among actors. Further, Bagozzi (1975) categorized three types of exchanges: utilitarian which is a more economic form of exchange, symbolic, which refers to transfer of intangible psychological or social exchange among actors and thirdly, mixed exchange, which is a combination of utilitarian and symbolic exchanges.

This study adopted the generalized form of exchange where actors in a social network facilitate and benefit from information flow which serves as an important resource exchanged among the actors and which influences their decision making process and behaviour. Emerson (1976) argued that social exchange entailed serial interactions that generalize obligations. He further theorised that SET's explanatory power was measured using rules and norms of exchange, resources exchanged in a social interaction, and relationships emerging from such social exchanges.

Research on social networks using SET has increased in the last decade in management studies. Social exchange relations have been used to explain job performance (Zhang & Venkatesh, 2013), turnover (Kilduff & Krackhardt, 1994; Nayak et al., 2018), innovation (Obstfeld, 2005), mobile phone usage (Reychav et al., 2016) healthcare (Wheatley & Buglass, 2019; Yuan et al., 2020) and entrepreneurship studies (Boso et al., 2013). However, the theory has not been widely explored to explain consumer attitude towards technology and technology usage.

SET was used in this study to explain the exchange relations that flow in social network interactions and how the interactions influence consumers' attitudes towards technology and consumer technology usage. The theory was found appropriate due to its assumption that social exchange creates social structures which enable individuals to influence one another in their daily lives. Despite the criticism that the theory has a weakness of theoretical ambiguities, this study found it useful in exploring new grounds in consumer technology usage on the theoretical assumptions that social exchange is characterised by rules and norms of exchange, value attached to the resources exchanged in the exchange relations, and the value of relationships that emerge from the interactions. This study used SET to anchor the social network variable which was operationalised by tie strength: strong ties and weak ties as defined by Granovetter (1977).

2.2.3 Tie strength theory

Tie strength constructs, strong social network ties and weak social network ties were used to operationalise SET. Granovetter (1977) theorised that the existence of a tie or link suggests existence of interested exchange between parties. Furthermore, Granovetter (1985) advocated for recognising the close embeddedness of behaviour in social interactions: SET is therefore aligned with Granovetter's argument (Cook & Whitmeyer, 1992; Cropanzano et al., 2017; Cropanzano & Mitchell, 2005). Scholars have argued that people in a tight network tend to have homogenous traits such as same level of information, prefer to keep loose connections with people in other social networks as a source of novel information (Gilbert & Karahalios, 2009; Marsden &

Campbell, 2012).

Weak ties was used to study job seekers (Granovetter, 1985). The study found that 16.7% saw their contacts often at the time of the job search, 55.6% occasionally and 27.8% rarely saw their contacts. Granovetter concluded that rather than strong ties, weak ties help job seekers find their desired jobs. Marsden (2009) however advanced this argument and concluded that while weak ties benefitted job seekers in more professional careers, job seekers from lower social economic backgrounds relied more on strong ties. At the same time, Gong et al., (2020) opined that weak ties had the propensity to influence consumer behaviour indirectly through strong network ties due to the trust factor required among actors to influence behaviour.

Magni et al. (2012) studied 265 employees working in 44 teams in a large financial institution and concluded that strong ties had a higher influence on technology usage than weak ties within a team. In another study, Okello et al. (2018) sampled 400 heads of poor households in rural Uganda in a study of mobile money usage and found that existence of social networks of strong and weak ties among mobile money users promoted financial inclusion. He also concluded that there was a positive moderating effect of social networks in the relationship between mobile money usage and financial inclusion.

The interconnectedness between two strong ties through a weak tie provides the linkage to new information and insights. Granovetter (1977) argued that weak ties are strategic opportunities that give people an opportunity to access information, ideas and opportunities from other groups, which they would not get in their closely knit group because in their strong ties, members share the same level of information. Granovetter (1977) further argued that social systems lacking in weak ties would be fragmented and incoherent. In such strong social network ties lacking in weak ties, new ideas would spread slowly and scientific endeavours would be handicapped.

2.3 Empirical literature review

2.3.1 Consumer attitudes and technology usage

Behaviour can be explained by a person's attitude towards the behaviour (Ajzen & Fishbein, 1980). Davis (1989) proposed the Technology Acceptance Model (TAM) and referenced the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) to explain how consumer attitude towards technology (measured using Perceived Usefulness; PU and Perceived Ease of Use (PEOU) influenced consumer technology usage. TAM sits at the nexus of behavioural and information system studies and posits that perceptions by a consumer that a technology is useful and easy to use results in favourable attitude that leads to consumer usage of such technology.

The robustness of PU and PEOU in explaining consumers' attitudes towards technology and technology usage has been demonstrated across different technologies, such as online streaming (Camilleri & Falzon, 2020), telemedicine and health informatics technology (Kamal et al., 2020; Rahimi et al., 2018), online learning (Alfadda & Mahdi, 2021), and leisure travel and tourism (Singh & Srivastava, 2019). Studies have proved PU to be a stronger predictor of consumer attitude towards technology and technology usage (Abdinoor & Mbamba, 2017; Assaker, 2020; Camilleri & Falzon, 2020; Kamal et al., 2020) while PEOU has been found to influence consumer attitude through PU (Abdinoor & Mbamba, 2017; J. Lee et al., 2019; Wallace & Sheetz, 2014) more so compared to a direct relationship.

Some streams of research have focused on validating TAM while others have extended the theory by introducing additional constructs to enhance its explanatory power (Lee et al., 2019, Wallace & Sheetz, 2014). Lee at al. (2019) extended TAM with additional constructs: 'perceived enjoyment', 'social interactions' and 'tie strength', and concluded that in addition to PU and PEOU, other key predictors of consumer technology usage included perceived enjoyment and social interactions. Venkatech and Zhang (2010) evolved TAM into the unified Theory of Acceptance and use of Technology (UTAUT) and argued that individual level factors affected a consumer's

attitude towards technology and consumer technology usage. In their various studies, the foregoing authors argued that consumers' attitude towards technology and technology usage were conditioned by consumers' performance expectancy (similar to perceived usefulness), effort expectancy (similar to perceived ease of use), social influence, facilitating conditions and cultural boundary conditions.

Camilleri and Falzon (2020) integrated TAM with user gratification theory (UGT) to better understand the motivations to use online streaming services. Findings indicated that individuals' perceived usefulness and ease of use of online streaming services were significant antecedents of their intentions to use the technology. The results further showed that the respondents sought emotional gratification from online streaming technologies as they gave them a pathway to distract themselves into a better mood and to relax in their leisure time.

Kulviwat et al. (2007) similarly extended TAM using 'Relative Advantage', 'Pleasure', 'Arousal and Dominance' and proposed a new theoretical framework known as 'Consumer Technology Acceptance' (CAT). Using CAT, the authors argued that PU, PEOU, and arousal had the strongest influence on consumer attitude towards technology and consumer technology usage. The foregoing studies had similarity in their findings: that PU had the strongest direct effect on consumers' attitude towards technology and technology usage, while PEOU had less significance on direct effect, but a stronger indirect effect through PU. At the same time, the studies also concluded that there was room to enhance TAM with additional constructs to increase its predictive power.

The fact that TAM was proposed by Davis (1989) to explain consumer attitude towards technology and consumer technology usage at the firm level has revealed weaknesses when used in voluntary settings (Bagozzi, 2007; Rahimi et al., 2018; Wu & Lederer, 2009). Consequently, numerous studies have focused on extensions and integrations with additional constructs and other theories to increase TAM's power in voluntary settings. For instance, Mou et al. (2017) added trust and found that PU and trust were

important at both the initial and later stages in the consumers' attitude towards acceptance and usage of online health services. In a study of acceptance of telemedicine among rural populations, Kamal et al. (2020) enhanced the explanatory power of TAM by adding technological anxiety, social influence, trust, facilitating conditions, perceived risk and resistance to technology.

Similarly, Singh and Srivastava (2019) increased TAM's explanatory power in the study of the use of social media for outbound leisure travel by adding perceived trust and social capital. Rahimi et al. (2018) carried out a systematic review of TAM's usage in health informatics and concluded that most studies on the adoption of health technology had not found an optimal TAM version for use in health studies, resulting in majority of the studies extending TAM with additional constructs. He concluded that there was still room for expansion and improvement of TAM to increase its predictive performance in voluntary settings. Additionally, Kamal et al., (2020) extended TAM with additional constructs to investigate the factors that influenced acceptance of telemedicine among rural populations in Pakistan. The findings indicated that in addition to perceived ease of use and perceived usefulness, other predictors included technological anxiety, facilitating conditions, perceived risk and resistance to technology.

A systematic literature review of TAM's explanatory power of health informatics usage concluded that TAM in its original form was not optimal for health technology services and recommended areas of improvement to increase the predictive power of the theory (Rahimi et al., 2018). Other studies focused on enhancing TAM with moderating variables. For example, individual awareness, income levels, demographic factors, technological anxiety have been common moderators in increasing TAM's explanatory power (Abdinoor & Mbamba, 2017; Assaker, 2020).

The foregoing studies established that individual awareness, income levels and demographic factors enhanced TAM's explanation by moderating consumer attitude towards technology and consumer technology usage. Furthermore, TAM has been

faulted for excluding influence from social interactions as an important factor in predicting technology usage while other scholars opined that social interactions influenced technology related attitudes more compared to individual assessments and attitudes (Bagozzi, 2007; Reychav et al., 2016; Schepers & Wetzels, 2007; Wedajo et al., 2019).

Davis (1989) in his initial argument opined that PU and PEOU were strong predictors of behaviour and that all factors not directly included in the model could be explained by the two constructs. However, he later acknowledged this shortcoming when he revised TAM to include external variables including subjective norms (Venkatesh & Davis, 2000). Subjective norm refers to expectations of referent others towards an individual's attitude towards a certain behaviour (Kim, Shin, & Kim, 2011), while social exchange refers to the free exchange of information among actors in a social network. The two constructs are different since subjective norm refers to an individual being subject to normative pressure by others whom the individual considers influential in their lives, while social exchange means free exchange among actors with similar characteristics.

Additionally, a branch of behavioural scholars have argued that human behaviour is influenced by the social structures that the actors belong to, and not wholly dependent on individuals' decisions isolation (Bagozzi, 2007; Shirley Taylor & Todd, 1995; Venkatesh et al., 2003). Other scholars argued that perceptions and beliefs that are communicated during social interactions have an influence on usage behaviour (Hossain & de Silva, 2009; Kang et al., 2021; Wong et al., 2020). Furthermore, some scholars have faulted TAM's relationship path from PU and PEOU to behaviour through behaviour intention as not necessarily acceptable. This is especially the case in in social science research because of the propensity by consumers to change their minds between the time the intention is formed in their minds to the time the consumer performs that behaviour (Bagozzi, 2007). In this study, we measured a direct relationship from PU and PEOU to consumer behaviour.

In a study to validate TAM's measurement scale, Davis (1989) did a two-part research study and found that PU had a significantly greater correlation with usage behaviour than PEOU. The findings were corroborated by Adams et al. (1992) in a replication two-part study in USA that examined the relationship between ease of use, usefulness, and system usage. The two studies evaluated psychometric properties of PU and PEOU scales, while examining the relationship between PU, PEOU and system usage. The first study sampled 118 respondents from 10 different organizations in the USA, while the second study sampled 73 users. The results demonstrated reliability and validity of the measurement scale. Using structural equation modelling, the study showed the importance of both PU and PEOU in determining technology usage. However, the studies in the two organizations focused on users in a controlled environment where usage of technology was mandatory; on the contrary, this study focused on explaining technology usage among consumers in a voluntary setting within the banking sector.

TAM has remained very popular and most frequently used theoretical framework in Information System (IS) and consumer technology usage studies (Lai, 2017). Furthermore, TAM has been extensively used for recognizing the factors affecting the acceptance of technology in a variety of contexts like USA, Korea, and China (Jeong & Yoon, 2013; Venkatesh & Zhang, 2010) and in various domains like m-shopping (Hubert et al., 2017), mobile banking (Jeong & Yoon, 2013), online health (Y. Zhao et al., 2018), mobile learning management (Joo et al., 2016).

In view of the foregoing arguments, this study hypothesized that:

H1: Favourable perceived usefulness of a technology is positively associated with the extent and frequency of consumer technology usage.

H2: Favourable perceived ease of use of a technology is positively associated with the extent and frequency of consumer technology usage.

2.3.2 Social networks and technology usage

In theorizing about tie strength, Granoveter (1973) defined the strength of a tie in terms of a combination of time, emotional intensity, intimacy and reciprocity. The strength of social network ties among actors enhances resource flow and sharing between actors (Cai et al., 2015; Reychav et al., 2016; Vishnu et al., 2019; Wedajo et al., 2019). Social interactions within social networks influence more the technology-related attitudes and psychological processes compared to objective and independent assessments of technical characteristics (Katz et al., 2004; Lee et al., 2003; Magni et al., 2012). Various authors hold similar opinions on the role of social networks in explaining the variation in consumer technology usage as summarised in Table 2.1

Table 2.1: Importance of social networks in influencing consumer behaviour

Increases connectedness and cohesion which promotes group oriented behavior by reducing information asymmetry (Deepak et al., 2016; H. E. Lee & Cho, 2017; Murendo et al., 2018; Wheatley & Buglass, 2019).
Interaction among actors in a network helps to build social capital (Xhema, 2019).
Social networks help in mobilization and collaboration towards a common purpose or a common behavior (Bagchi, 2001; Jost et al., 2018; Quinton & Fennemore, 2013; Verma, 2015; Wedajo et al., 2019).
Social networks provide benefits of information, influence, trust, solidarity and exchange which in turn helps actors in decision making (Cho & Chan, 2021; Hinz et al., 2014; Voelker & Pentina, 2011; Zhang & Venkatesh, 2013).
Social networks among entrepreneurs help in the discovery of new business opportunities, mobilization of resources and growth of businesses (Batjargal et al., 2013).

(Source: Researcher, 2022)

Social network ties have been identified as major determinants of consumer propensity to use a technology in areas such as education (Deepak et al., 2016; Gruzd et al., 2018; Lee & Cho, 2017; uz Zaman et al., 2019), entrepreneurship (Batjargal et al., 2013; Eggers et al., 2017; Martins, 2016) insurance (Cai et al., 2015), job performance (Agarwal & Karahanna, 2000; Magni et al., 2012; Nayak et al., 2018; Zhang & Venkatesh, 2013), mobile phone usage (Birke, 2013; Murendo et al., 2018; Reychav et al., 2016), agriculture (Micheels & Nolan, 2016) and healthcare (Cangelosi et al., 2018; Wheatley & Buglass, 2019; Yuan et al., 2020). However, the role of social

networks in moderating consumer attitudes towards technology and technology usage is still in its early stages of research and requires more studies. Furthermore, not much attempt has been made to distinguish between the influence by strong and weak ties separately in consumer technology usage (Hosain & de Silva, 2009).

According to Granovetter (1985), both strong ties and weak ties are important in influencing consumer behaviour. People in a tight network (strong ties) tend to have homogenous traits such as having the same level of information. Strong tie networks are characterised by closeness, trust and common norms, and members make similar decisions because they have the same level of information, beliefs and influences through close interactions. Actors in such networks are not likely to have information outside their social network and therefore, according to Granoveter (1985), they prefer to keep loose connections with people in other networks (weak ties) as a source of novel information. Keeping connection with weak social network ties makes information flow between strong social networks to be enriched and useful in influencing decision making and behaviour.

Weak ties are therefore strategic and give people an opportunity to access information, ideas and opportunities from other networks which they would not otherwise get from their strong tie networks (Cengiz, 2006). Magni et al. (2012) studied employees working in 44 teams in a large financial institution and measured the influence of strong and weak social network ties. Findings concluded that strong ties had a higher influence on technology usage than weak ties within a team.

A study of uptake of mobile money in a rural community in Uganda concluded that mobile money adoption was positively influenced by the size of social network within which information was exchanged and that the effect was particularly pronounced in non-poor households, (Murendo et al., 2018). Steffes and Burgee (2008) studied the emergent online communication platforms and their adoption by consumers. Some 482 college students with varying levels of expertise were exposed to the use of eWOM (electronic word of mouth) from virtual strangers (weak ties). Specifically, they

contextualized the study on RateMyProfessor.com in USA. The results revealed that the information that students obtained from eWOM was more influential in their decision-making than from speaking with their friends in person. Similarly, Granovetter (1995) conducted a study on how professional, technical, and managerial males obtained information about a new job. Using men from Newton, Massachusetts who had changed jobs within five years, a random sample of 457 men was used out of which 100 were taken through personal interviews. The study found that personal contacts (strong ties) was the predominant source of information about better paying jobs than jobs found through more formal means (weak network ties).

Langlois (1977) studied workers in the Quebec Provincial government to establish how they got to know of new job opportunities. The study defined ties strength by the recency of contact between individuals and found out that weak ties were more effective in finding a new job, although it was also varied from one occupation to another and the level of the job. Professionals and office workers used weak ties while junior officers depended on strong ties more frequently. The foregoing literature reveals that both strong ties and weak ties are equally important in influencing consumer behaviour. As more firms embrace research on consumer technology usage, there is need to study the role of social network tie strengths in influencing consumers' attitude on technology and consumer technology usage.

The foregoing studies support the view that tie strength has an impact on behaviour outcomes in a social network context. Therefore, the potential effect of tie strength on consumer technology usage is worth exploring. The study thus hypothesised that:

H3: Strong social network ties positively influence the extent and frequency of consumer technology usage.

H4: Weak social network ties positively influence the extent and frequency of consumer technology usage.

2.3.3 Social networks, consumer attitudes and technology usage

In theorising about tie strength, Granovetter (1973) defined the strength of a tie in terms of a combination of time, emotional intensity, intimacy and reciprocity. The strength of social network ties among actors enhances resource flow and sharing between them (Cai et al., 2015; Reychav et al., 2016; Vishnu et al., 2019; Wedajo et al., 2019). Social interactions within social networks influence technology-related attitudes and psychological processes more compared to objective and independent assessments of technical characteristics (Katz et al., 2004; Lee et al., 2003; Magni et al., 2012).

Social network ties have been identified as major determinants of consumer propensity to use a technology in areas such as education (Deepak et al., 2016; Gruzd et al., 2018), entrepreneurship (Batjargal et al., 2013; Eggers et al., 2017; Martins, 2016), insurance (Cai et al., 2015), job performance (Agarwal & Karahanna, 2000; Magni et al., 2012b; Nayak et al., 2018; Zhang & Venkatesh, 2013), mobile phone usage (Birke, 2013; Murendo et al., 2018; Reychav et al., 2016), agriculture (Micheels & Nolan, 2016) and healthcare (Cangelosi et al., 2018; Wheatley & Buglass, 2019; Yuan et al., 2020). However, the role of social networks in moderating consumer attitudes towards technology and technology usage is still in its early stages of research and requires more studies. Furthermore, little attempt has been made to distinguish between the influence of strong and weak ties separately in consumer technology usage (Hosain & de Silva, 2009). In addition, while the role of social networks has been studied widely in behavioural studies, most research has concentrated on firm level analysis in explaining innovativeness and firm performance (Boso et al., 2013; Shane & Cable, 2002).

Extant literature reveals that the definition of social networks had been varying with some studies limiting their scope to elements of social networks such as social influence (Cho & Chan, 2021; Risselada et al., 2014), and social capital (Uz Zaman et al., 2020; Wedajo et al., 2019). Existing literature revealed that conceptualizations, theoretical frameworks and measurements of social networks varied, resulting in mixed and sometimes contradicting results which limited the ability to generalize such

findings (Hoang & Antoncic, 2003; Murendo et al., 2018; Okello et al., 2018; Vishnu et al., 2019).

Several studies extended TAM with social variables signalling a well-acknowledged weakness of TAM (Assaker, 2020; Camilleri & Falzon, 2020; Hossain & de Silva, 2009; Kamal et al., 2020). Although some studies focused on technology usage by end consumers, they were fewer compared to those contextualised in controlled environments such as educational institutions or working environments (Marangunić & Granić, 2015; Venkatesh & Davis, 2000). By integrating social networks and consumer attitudes, this study sought to enhance TAM's predictive power by addressing the shortcomings of omitting social variables in its constructs. At the same time, the study integrated the assumptions of SET and tie strength, to address the fragmentation of conceptualisation, operationalisation of variables and measurement scales observed in social networks research.

According to Risselada et al. (2014), there is likelihood for social influence playing a role in the customer's adoption of new technology products because such a decision requires a customer to search for extensive information from different sources. Using call detail records to construct ego networks for customers of a Dutch mobile telecommunications operator, Risselada et al. (2014) used a fractional polynomial hazard approach, modelled adoption timing and multiple social influence variables. Results showed that the effect of social influence in a customer's network decreases from the product introduction onward, while influence on recent adoptions remained constant. According to Venkatesh et al. (2003), social influence refers to an individual's belief in what significant others expect that person to do. Unlike social interactions, social influence does not factor in the exchange of information in social networks which influences an individual's attitude towards a technology.

In a study on the impact of social capital on tourism technology adoption process, Lee et al. (2013) examined the relationship between social networks and technology adoption. By integrating social networks and TAM, destination marketing organization

managers in USA were surveyed. The authors found that different aspects of social networks such as trust exerted significant effects on attitudes regarding technology adoption. The study based its analysis on firm-level where workers in tourism may not have had the freedom to choose whether or not to use a new technology since the decision to implement technology was institutional. Furthermore, social capital was defined as the resources accessed through social connections (Villalonga-Olives et al., 2016), and therefore the study limited its definition of social networks.

Contrary to the foregoing authors, Aral et al. (2009) held a different view: that effect of social network on consumer behaviour is overrated compared to homophily. Using a dynamic matched sample estimation framework to distinguish influence and homophily effects in dynamic networks, the authors studied global instant messaging network of 27.4 million users, using data on the day-by-day adoption of a mobile service application and users' longitudinal behavioural, demographic, and geographic data. The findings concluded that homophily explained more than 50 per cent of the adoption behaviour.

The principle of homophily states that contacts between similar people occurs at a higher rate than among dissimilar people (Burke, Fourner & Prassad, 2007). The same definition is corroborated by Mcpherson (2001) in his argument that similarity breeds connection and that ties between non-similar individuals dissolve at a higher rate. While Aral et al. (2009) argued about homophily as a different concept from social network, the foregoing argument about homophily demonstrates a similarity with strong network ties, further demonstrating that studies in social network and its impact on consumer behaviour is still confronted by lack of standardised definitions and operationalisation of concepts. This further creates confusion.

A few studies have used an integrated model of TAM and social networking to study technology usage by consumers, with varying results. In a study of the relationship between technology acceptance and social networking in distance learning, Lee et al. (2003) examined students' attitudes towards technology using two approaches.

First, they used TAM to study attitude formation over time. The study demonstrated that the students' initial expectations affected perceptions of attitude towards the use of the system. The study then integrated TAM with Social Information Processing Model (SIPM). Using network analysis to deduce their findings, the study concluded that an individual user's change of attitude was significantly influenced by other students' change of attitude. The study integrated two theories while the current study proposes to include social networks as an additional variable to TAM to increase its explanatory power.

Regionally, studies have similarly used different definitions and measurements to study the effect of social networks and consumer's attitude on technology adoption, with fewer studies focusing on actual usage of the technology. Krishnan and Patnam (2014) set out to establish the reason behind low adoption of fertilizer and improved seeds by farmers in Ethiopia. They used data from Ethiopia between 1999-2009 to examine the role of learning extension agents versus learning from the network of neighbours for both improved seeds and fertilizer adoption. Using a combination of farmers' spatial networks with panel data to identify these influences, they found that while initial impact of extension agents was high, the effect wore off after some time, in contrast to learning from neighbours' networks.

Okello et al. (2018) tested the moderating effect of social networks in the relationship between mobile money usage and financial inclusion in rural Uganda. The findings suggested that existence of social networks of strong and weak ties among mobile money users promoted financial inclusion. Contextually, the study targeted mobile money which entails consumers using mobile money transfer services; it did not include mobile banking which is the main focus of the current study. The study used social network theory but did not take into consideration individual consumer's attitudes.

Farahat (2012) studied factors that influenced students' intention to use online learning in a university in Egypt. Using a conceptual framework that modified the TAM, 53

undergraduate students who used online learning were studied using a survey method. The results revealed that students' intention to use online learning platforms was influenced by their perception of ease of use, usefulness, and the social influence of students' referent groups. Although the study attempted to fill the gap of TAM's omission of social variables, the inclusion of social influence did not incorporate the perspective of social interactions. At the same time, the study did not address actual usage as the outcome of the study, but rather studied intention to use technology which is different from actual usage. This study was contextualized in a voluntary environment among individual mobile banking customers and integrated social networks to study its influence on consumer attitude in determining technology usage among consumers.

In Kenya and Malawi, Behrman et al. (2003) examined individuals' learning and decision making about AIDS in the context of high uncertainty about the disease and appropriate behavioural responses. The authors tested the role of social interactions in the decision making process of individuals. Using longitudinal survey data, they investigated whether social interactions and especially the extent to which social network partners perceived themselves to be at risk. The study showed that social networks had significant and substantial effects on risk perceptions and the adoption of new behaviours even after controlling for unobserved factors.

2.3.4 Consumer attitudes, strong ties and consumer technology usage

Consumer attitude (PU and PEOU) have been proven to be significant predictors of consumer attitudes towards technology and technology usage (Assaker, 2020; Camilleri & Falzon, 2020; Granić & Marangunić, 2019). However, empirical studies argue for further integration of TAM with other theories to obtain a stronger explanation of consumer technology usage (Kamal et al., 2020; Lee et al., 2003; Rahimi et al., 2018).

Strong tie networks have a high propensity to condition consumer attitudes towards a behaviour in three ways: the free flow of information and subjectivity to common pressures leads to common decision making and behaviour; group norms of reward

and punishment are magnified in their impact further reinforcing the concept of conformity; and, the strong tie networks are characterized by trust which increases confidence among actors to have similar attitudes towards a behaviour (Granovetter, 2005). In strong networks ties, the actors' trust for each other facilitates free exchange of information which in turn influences their attitude and decision making because they share the same level of information, beliefs and influences through close interactions (Haythornthwaite, 2002; Murendo et al., 2018; Wedajo et al., 2019; Young & Ready, 2015).

Trust has been argued to be an important factor in determining the success of exchange and interaction activities which in turn influence consumer attitudes towards technology and technology usage (D. W. Kim et al., 2020; Van et al., 2020). Relationships within a strong tie network demonstrate strong investment of time and reciprocity (Cho & Chan, 2021; Hossain & de Silva, 2009). Additionally, strong ties have been described as robust, resilient and structurally equivalent because they are subjected to similar normative pressures and standards (Marsden & Campbell, 2012). Strong tie networks have been proven to act as a great source of information and influence for actors to try out a new technology or information system due to the high level of credibility provided by information exchanged through interactions among closely-knit ties (Ruef, 2002; Slade et al., 2013; Zhang & Venkatesh, 2013). In view of the foregoing, we hypothesized that:

H5: The relationship between perceived usefulness of a technology and consumers technology usage is strengthened when levels of strong social network ties increase in magnitude.

H6: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude.

2.3.5 Consumer attitudes, weak ties and consumer technology usage

When actors in a strong tie network require novel information to make decisions, they reach out to their weak tie networks. Weak social network ties are characterised by absence of or infrequent contact, lack of emotional closeness and reciprocity, and facilitate the adoption of innovations compared to strong ties (Hossain & de Silva, 2009). Through weak social network ties, novel and non-redundant information (such as finding a new job, obtaining a scarce service) flows and diffuses to distinct social networks more than through strong ties (Granovetter, 1977). The strength of weak ties is founded on the fact that weakly tied persons, though unlikely to share resources similar to strong network ties, operate in distinct social networks, have access to different knowledge and resources, and act as bridges between distinct strong network ties (Garton et al., 1997). Social systems lacking in weak ties risk fragmentation and incoherence and have high chances of suffering a slow spread of novel and innovative ideas.

Weak ties are less subjected to the closure and transitivity pressures that operate on strong ties (Marsden & Campbell, 2012). Their most notable role is structural significance as connectivity-generating factors that connect clusters of strong social network ties. This means that weak ties also influence consumer behaviour indirectly through strong network ties due to the trust factor required among actors to influence behaviour (Gong et al., 2020). Other studies have demonstrated that the stage of technology adoption can determine whether consumers rely on their strong ties or weak ties to influence their technology usage behaviour; a study of farmers' adoption of new agricultural practices revealed that the high initial influence of weak ties (agricultural extension workers) decreased with time as farmers began to rely more on the opinion of their neighbours (strong ties).

Steffes and Burgee (2009) studied the emergent online communication platforms and their adoption by consumers. A sample population of 482 college students with varying levels of expertise was exposed to the use of eWOM (electronic word of mouth) from virtual strangers (weak ties). The study was contextualised using RateMyProfessor.com

in the USA. The results revealed that the information that students obtained from eWOM (weak ties) was more influential in their decision-making compared to speaking with their friends in person. Weak ties are therefore strategic and give actors in a strong tie network an opportunity to access information, ideas and opportunities from other networks which they would not get from their strong tie networks. When novel information flows to strong network ties from weak tie links, it infuses new insights to actors in the strong tie network, which influences their attitudes and behaviour.

We therefore hypothesised that:

H7: The relationship between perceived usefulness of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude.

H8: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude.

2.4 Knowledge gaps

2.4.1 Theoretical gaps

TAM was theorised to explain how individual attitudes among individuals in working environments influenced their technology acceptance and usage. Empirical evidence suggest that in addition to individual attitudes, social interactions among individuals moderate their attitudes towards technology and levels of technology usage, both in mandatory environments as envisioned by Davis (1986) and in voluntary environments as argued by Bagozi (2007). Some scholars have extended TAM by adding various constructs such as subjective norm and social influence (Hartwick & Barki, 1994; Lucas & Spitler, 1999; Moore & Benbasat, 1991; Venkatesh & Davis, 2000), to enhance TAM's predictive power. However, while recognising the need for social variables as key determinants of consumer attitudes towards technology and technology usage, social influence and subjective norms did not embrace the full scope of social

interactions within social networks.

Social networks provide benefits of information, influence, trust, solidarity and exchange which in turn helps actors in decision making (Hinz et al., 2014; Voelker & Pentina, 2011; Zhang & Venkatesh, 2013). Subjective norm has been defined as one's perception of social normative pressures or peers' beliefs that influence one's attitude towards performance of a particular behaviour or following a common practise (Kaushik et al., 2015). Similarly, social influence consists of two distinct influences: informational influence and normative influence. Informational influence occurs when a user accepts information obtained from other users as evidence about reality, while normative influence occurs when a person conforms to the expectations of others to obtain a reward or avoid a punishment (Deutsch & Gerard, 1955).

This study addressed TAM's theoretical gap by introducing social networks as both an independent variable towards technology usage and a moderating variable between consumers' attitudes towards technology and technology usage by consumers in a voluntary environment. Empirically, while literature exists on the study of consumer technology usage using TAM as the theoretical foundation, most studies focus on mandatory settings such as workplace or educational institutions (Marangunić & Granić, 2015; Yousafzai et al., 2007). A few studies focussed on voluntary settings and considered the role of social interactions in predicting technology usage by consumers (Farahat, 2012; Granovetter, 1995; Lee et al., 2003). Equally, there were few scholars who contextualised their studies in emerging markets (Lule et al., 2012; Murendo et al., 2018)

Past studies on the influence of social networks on consumer attitude towards technology and technology usage applied diverse theoretical frameworks to study the extent to which social networks, in their various forms, were related to consumer technology usage. However, the adoption and utilization of these theoretical frameworks led to fragmentation of findings, lack of consistency in the conceptualization and operationalization of key social network constructs.

The pertinent literature revealed that definitions, conceptualizations, theoretical frameworks and measurements of social networks varied, resulting in mixed and contradicting results which limited the ability to generalize such findings (Hoang & Antoncic, 2003). For instance, in a study of the relationship between online social networks and technology adoption, Peng and Mu (2011) used social network theory and measured the role of lock-in effect, imitation effect, similarity and leadership effects. In a study of the interaction between social media networks and political protests, Jost et al. (2018) measured information exchange, motivational content and coordination of protest activities, while a study of the relationship between social network interactions and talent management by Nayak et al. (2018) anchored the study on social capital theory and measured talent retention, talent management and organizational branding.

In yet another study on the role of social networks in developing radically new products in firms, Iacobucci and Hoeffler (2016) used the Bass diffusion model and focused on strength of network ties and measured betweenness, closeness, and centrality. This inconsistent approach revealed confusion which led to varied findings and fragmentation. However, the evident increase of interest in this area of study, and the fragmentation identified indicate the growing recognition of social networks as an important predictor of consumer technology usage and presents an opportunity for further research to bring order to this research area.

Studies of social network interactions lacked a key theory or theories with consistent and empirically tested constructs and measurement items that could be used to explain the influence of social networks on consumer technology usage. Table 2.3 contains the various theories used in the reviewed literature and their key assumptions. A summary of the cross-cutting assumptions that were found in the various theories is also provided to demonstrate the existing conceptual framework gap in anchoring empirical studies on social networks, consumer attitude towards technology on consumer technology usage. Such a framework would support the advancement of theoretical foundations in

the study of social networks. It would also pave way for future studies that would advance new theories to support the growing interest in the study of the interaction between social networks, consumer attitudes and consumer technology usage.

Table 2.3: Summary of knowledge gaps arising from lack of a common theoretical framework to explain social networks

Theories commonly used in the reviewed studies	**Assumptions**	**Common assumptions across the theories used**
Social Network Theory	• Actors are embedded within networks of interconnected relationships that provide opportunities for and constraints on behaviour (Burt, 1997).	• Interconnectedness • Strength of ties • Relationships among actors • Interactions • Exchange of resources • Information flow • Influence in decision making • Influence on behaviour • Trust • Reinforcement • Network structure • Network size • Frequency of interactions
Social Capital Theory	• Individual networks and connections accrue shared norms and values, exchanges and obligations that can potentially provide access to different resources such as emotional, informational or instrumental support (Bourdieu, 2011)	
Social Learning Theory	• Social interactions between actors in a social network facilitate change in understanding beyond an individual and become situated within wider social units (Vishnu et al., 2019). • Learning from interactions in a network influences behaviour among the actors (DiMaggio & Garip, 2012). • Individuals tend to turn to more experienced individuals for information and support.	
Diffusion of Information Theory (DIT)	• A theory that seeks to explain how, why, and at what rate new ideas and technology spread through a specific population or social system. The five factors that determine the rate of adoption of technology are: relative advantage, compatibility, complexity, trialability and observability (Rogers, 1976).	
Social Network Analysis	• SNA is founded on the premise that how a system is structured determines the systems behaviour and outcomes (Borgatti & Ofem, 2010).	
Social Influence Theory	• The impact created through interactions among people in a social context affects individuals' adoption behaviours in a social network • A person endowed with an initial opinion or behavioural assessment receives and responds to information propagated in a social network and could chose to modify an original opinion or assessment accordingly.	

Source: Researcher (2022)

2.4.2 Conceptual gaps

Another identified key gap was the fragmentation in the operationalisation of social networks variable. Multiple constructs were used to operationalize social networks. The lack of a standard measurement scale in Hoang and Antoncic (2003) study resulted in

mixed and contradicting findings. For instance, Lee (2015) and Wedajo et al. (2019) both used social capital theory, but with varying constructs. While Lee (2015) found that tie strength was not a significant predictor of consumer technology usage, Wedajo et al. (2019) on the contrary realised that social network ties significantly influenced consumer technology usage. Similarly, Magni et al. (2012) argued that strong ties impacted high influence on consumer technology usage than weak ties, while Vishnu et al. (2019) found that weak ties had a stronger influence on consumer technology usage than strong ties. Katona et al. (2011) on the other hand argued that bridging ties/brokering position was more influential towards consumer technology usage.

A research gap was identified on consumer technology measures; literature reviewed revealed a wide variation of system usage measures, making it hard for scholars to compare various research findings. Fragmentation was occasioned by usage of various theoretical foundations with varying definitions of consumer technology usage and diverse conceptualization and measurement approaches. However a common factor in the definitions included acknowledgement of the influences on consumer attitudes on technology towards technology usage by factors such as social interactions and individual and group perceptions. Similarly, the literature reviewed presented the need for a key theory or theories with consistent and empirically tested constructs, and measurement items that could be used to explain the influence of social networks on consumer attitudes on technology and consumer technology usage.

While several theoretical approaches were used in the reviewed literature, this study found it surprising that the use of social exchange theory was not very common in the study of consumer technology usage. The Social Exchange Theory (SET) was not used in the studies reviewed. SET was advanced by behavioural theorists to explain social exchange relations within social networks informed by the concept of reinforcement (Emmerson, 1976). According to Emmerson (1976), SET explanatory power is measured using rules and norms of exchange, resources exchanged in a social interaction, and the relationships emerging from such social exchanges. SET has an overarching framework that has been applied in other disciplines and could be useful to

be applied on consumer technology usage. As shown in Table 2.4 different studies used different theories and assumptions leading to fragmented findings, the varied definitions of consumer technology which leads to various measurements of items, as well as a summary of the cross-cutting assumptions that were found in the various theories.

Table 2.4: Summary of research gaps arising from varied definitions, conceptualizations and measurements of consumer technology usage

Study	Theory used	Definition of consumer technology usage	Measurement items
Lee et al. (2016)	• Social capital	Time spent interacting and network in social networking sites by users	• Usage type (shopping, information sharing, networking, entertainment) • Level of usage (high/low) • Frequency of usage •
Larosiliere et al. (2017)	• Diffusion of information theory (DIT) • Theory of Planned Behaviour (TPB) • TAM	Overall use of virtual social networks (Facebook, Twitter, LinkedIn etc.) for both personal and professional communication.	• Extent of usage
Drennan (2010)	• Attitudinal Theory	Consumers utilization of M-banking services	• Ease of use • Usefulness • Cost • Perceived risk • Compatibility
Uz Zaman et al. (2020)	• Complex Adaptive System (CAS) based theory • Social capital	Time spent socializing and networking in online social networks by consumers	• Frequency of use • Increase in level of socialization • Extent of usage • Increase in religious knowledge • Increase in level of trust in social network sites
Nayak et al. (2018)	• Social capital theory • Social networking theory • Grounded theory	Utilization of Social Networking Sites (SNS) as part of the organizational Human Resource strategy for employer branding, talent sourcing, acquisition and retention and reinforcing stronger relationship with their employers.	• Usage type (talent acquisition, employer branding, employee engagement) • Extent of usage
Cho and Chan (2021)	• Elaboration Likelihood model • Social influence theory	Consumer behaviour that results from informational social influence and normative social influence which in turn influence consumers decision to use online review sites	• Frequency of usage • Tenure on online review sites • Level of information adoption (high/low)
Wedajo et al. (2019)	• Social capital theory	The action that results from interactions among a wide range of actors who form a system of mutually reinforcing activities and relationships which in turn influence the actors' attitudes, decisions, adoption and usage of the technology.	• Improved crop variety • Extent of collective adoption of technology by farmers • Increased level of trust in the technology • Extent of enhanced rural livelihoods
Magni et al. (2012)	• TAM • Social network theory	The way through which individuals interact with a system	• Depth of usage • Scope of usage • Intensity of usage • Perceived ease of use • Perceived usefulness

Source: Researcher (2022)

Most of the aforementioned studies did not consider the moderating effect of social networks on consumer attitudes on technology and consumer technology usage. In addition, the settings for most studies were concentrated in developed countries and few addressing technology usage by consumers within voluntary environments in developing countries. There was therefore a need to carry out studies addressing these gaps. This study was based in Kenya, a developing country setting. Kenya has made significant strides in technological advancements especially in the banking industry and provides an appropriate setting for the study of consumer technology usage within a voluntary environment (Amrik & King, 2015).

Table 2.3: Summary of knowledge gaps

Authors	Study focus	Research methods	Main findings and conclusions	Gaps	Focus of current study
Joo and Kim (2016)	Extending TAM theory with expectation confirmation theory, satisfaction and continuance intention to determine the predictors of actual usage of a mobile learning technology among university students	Questionnaires administered to 222 students in a Korean online university. Results analysed using structural equation model	PU and satisfaction predicted continuance intention PEOU was not related to continuance intention Continuance intention predicted actual usage	Study focused measuring consumers' attitude on their usage of a mandatory learning platform in an educational institution where students had no choice in using the system.	The influence of consumer attitudes and social networks on actual usage of a technology is a voluntary environment.
Ashraf et.al., (2014)	Extending TAM with trust and behavioural control to examine their influence of the enhanced model on the adoption of e-commerce across cultures.	A survey of 250 university students internet users in Canada and Pakistan	The study validated the importance of consumer attitude (PEOU and PU) in influencing consumer technology usage across cultures.	The study measured technology usage using behaviour intention. Behaviour intention has been criticized as not necessarily translating into usage (Bagozzi, 2007).	How social networks influence consumer attitude towards technology on consumer technology usage
Steffens and Burgee (2009)	How social network ties impact on electronic Word of Mouth (eWOM) in determining users' decision-making process.	Data was collected from a sample of 482 college students in USA	eWOM forums influenced students more than their own friends, suggesting that weak ties were more influential in decision making in an academic environment	Lack of theoretical and conceptual soundness since social ties alone is not adequate to study consumer technology usage	The study integrated TAM and social exchange theory to determine the relationship between social networks, consumer attitudes and consumer technology usage
Lee et al. (2003)	Examined the influence of social networking on technology acceptance in distance learning. The study used two theoretical approaches	Longitudinal survey was used in three stages, before exposure to the technology, while using the technology and after a period of using the technology. Students were asked to respond to a Likert scale	Using TAM to test user acceptance, the research found the students initial expectations affected attitude towards use of the system. Using social network analysis, the study found that attitude was	The study did not integrate the two theoretical models to examine impact of the integrated model, but rather performed a two-step survey. The study focused on social influence anchored by SIPM which does not operationalize social networking as social	The study used three theoretical models and integrated them to test the effect of the integrated model while also testing the effect of each model separately on consumer technology usage.

		type of survey tool	significantly influenced by other students' attitude changes	interaction but rather as influence over an individual by referent others.	
Granovetter (1995)	The study set out to establish how senior level managers went about looking for information on where to get a new job	457 men in Newton, Massachusetts, who had changed jobs within the previous 5 years were randomly selected. Personal interviews were conducted through administered questionnaires and emailed surveys.	Personal contact (strong ties) was found to be the most important source of information when finding jobs. Further, the study showed that jobs found by personal contact often were better paying.	While strength of ties has been used extensively to study job searches, not much literature exists to demonstrate how strength of ties which facilitate information flow for decision making can influence technology acceptance and usage among consumers.	This study extended TAM using strength of ties in social networks to explain their influence on consumer attitude towards technology and consumer technology usage

Source: Researcher (2022)

2.5 Conceptual framework

The reviewed literature has revealed knowledge gaps in the relationships between social networks, consumer attitudes on technology and consumer technology usage. This section focused on building a conceptual framework and hypotheses with insights from the reviewed literature. The study's conceptual framework shows that favourable consumer attitudes towards technology are associated with greater levels of technology usage. Additionally, the studies revealed that greater levels of social network dimensions (strength of network ties) are associated with greater consumer technology usage. In advancing knowledge on the baseline effect of consumer attitude towards technology on level of consumer technology usage, the current study further shows that the relationship between consumer attitude towards technology and levels of consumer technology usage would be strengthened when levels of social networks increase in magnitude. The conceptual framework in Figure 2.1 is based on the envisaged relationships among the three variables, namely: consumer attitudes, social networks and technology usage.

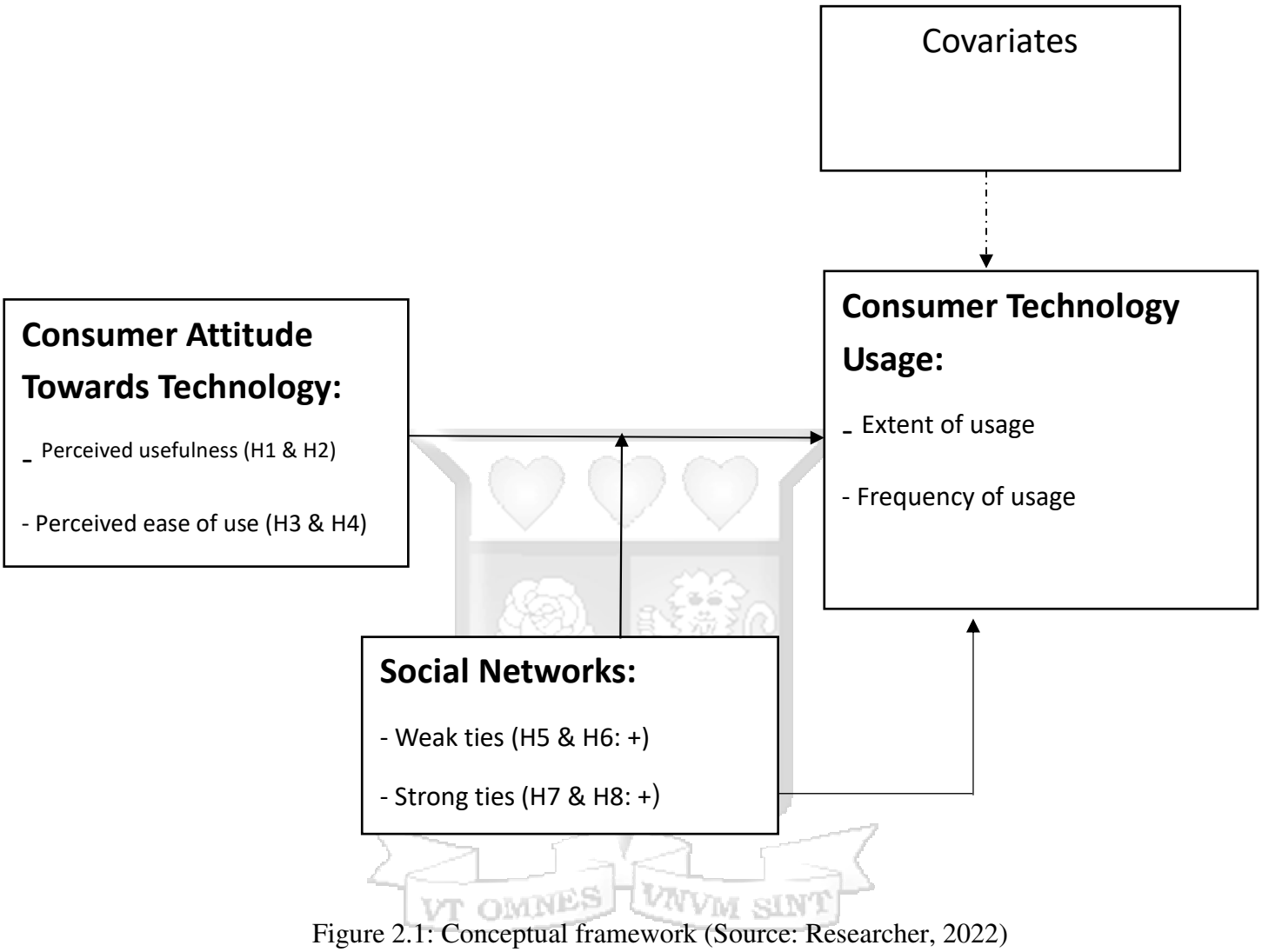

Figure 2.1: Conceptual framework (Source: Researcher, 2022)

Note: *Thick lines were hypothesised paths; broken lines were control paths from covariates including gender, age, employment status, formal education level, income category, travel experience, phone type, years of phone use, number of mobile devices owned, number of apps in use, internet on device, years of bank account, years of mobile service subscription, subscription status, bank type and number of adults in household.*

2.6 Chapter summary

This chapter reviewed and discussed theoretical foundations that underpinned the study. It further reviewed and discussed literature on the relationships between social networks, consumer attitudes on technology and consumer technology usage which was the dependent variable of the study. Arising from the foregoing literature review and discussions, the chapter came up with tables summarising the knowledge gaps that the empirical literature review identified. The chapter further described a conceptual framework upon whose relationship paths and study hypotheses were proposed. Through the conceptual framework and hypotheses, the relationships between the variables were delineated.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology that informed this study, beginning with a discussion on the research philosophy and research design. The target population, sampling method and operationalization of study variables are also discussed followed by data collection method and tests carried out to measure reliability and validity of the instruments. The chapter further discusses the analytical models used in the study and ends with an outline of ethical considerations that were taken into account during the study.

3.2 Research philosophy

Research philosophy encompasses a system of beliefs and assumptions regarding the development of knowledge (Saunders et al., 2016). The foregoing authors further stated that a research philosophy underpins choice of methodology, research strategy, data collection techniques and data analysis methods. There are two broad categories of research philosophy: ontological and epistemological approaches, where ontological approach is concerned with what constitutes reality, while epistemological assumptions entail the nature and forms of knowledge (Bryman, 2012; Crotty, 1998; Saunders et al., 2016). Two opposing philosophical debates exist under ontological considerations: the objectivist view which argues that phenomena have reality that is external of social actors, while the constructionist view holds that reality is socially constructed (Sarantakos, 2012). Epistemological stance comprises interpretivism and positivism stances (Bryman, 2012).

While positivism is concerned with explaining human behaviour, interpretivism is about understanding human behaviour (Bryman, 2012). Besides ontological and epistemological approaches, Saunders et al. (2016) added that a researcher can take the pragmatic approach which holds the view that the most important determinant of epistemology or ontology approach is the research question and therefore a study can work with variations of both approaches, especially if the research question applies a

mixed method of study.

This study adopted a positivist philosophical stance to explain the relationship between attitudes towards technology, social networks and technology usage. The study used evidence from mobile banking users in Kenya seeking to explain how social networks, consumer attitude towards technology and technology usage. This stance was the most suitable because the research question entailed testing hypotheses deduced from existing literature to establish relationships between independent and dependent variables based on technology acceptance model, social exchange theory, and tie strength theory. According to Bryman (2012), a positivist approach uses methods of natural sciences to study and explain human behaviour. The author further stated that in using a deductive approach, the researcher uses theories related to the area of study to deduce hypotheses and subjects them to empirical scrutiny through data collection, analysis and testing the hypotheses which then lead to confirmation or rejection of hypotheses.

3.3 Research design

Bryman (2012) opined that in a quantitative research, there are five different types of research designs: experimental (comparison between study sample and control group with regard to the dependent variable), cross sectional design (survey on a sample at a single point in time), longitudinal (survey on a sample on more than one occasion), case study (survey on a single case with a view to revealing important features about its nature) and comparative design (survey research where there is a direct comparison between two or more cases in a cross-cultural research). Bryman (2012) further argued that a research design is determined by the research method that the researcher employs: qualitative, quantitative or mixed method. Saunders (2009) defined research design as the general plan on how to go about answering a research question, specifying the research objectives, sources of data as well as ethical issues, and remaining consistent with the research philosophy. Sarantakos (2012) opined that a research design makes the steps of the research clear, enabling the researcher to foresee and prevent eventual errors, bias and distortions.

A cross sectional descriptive research design was considered the most suitable for this study because it enables data collection at a single point in time to establish the correlations that exist between variables in a given phenomenon (De Vaus & De Vaus, 2001). This study required information at a single point in time and not over a long period of time in order to assess respondents' attitudes within a specified period of time.

3.4 Target population of the study

Mobile banking users in Kenya were the targeted population for the study and were defined as individuals aged 18 years old and above who had linked their individual bank accounts to their mobile phones in order to access banking services using their mobile phones as a transaction channel. According to FinAccess (2019), 6.3 million Kenyans utilized mobile banking services. The age of 18 years was recommended for this study because it is the recognised age in Kenya for a citizen to obtain a national identification card, which is one of the requirements when opening a bank account in Kenya.

The research covered Nairobi, Machakos, Kajiado and Kiambu counties, which were selected because they represented both urban and rural regions of Kenya as well as the capital city. The choice was also convenient since data was collected at the height of Covid-19 pandemic in Kenya during which the government had imposed restrictions of movement to reduce the spread of the corona virus. The selected counties represented four large regions of the country, Nairobi, the capital city, Central region, Eastern region and Rift Valley region and they also represented rural, peri-urban and urban populations. In addition, the counties were geographically close.

3.5 Sampling process and design

A sample is the segment of the population (the universe of units) from which the sample is to be selected for the study. Through sampling, a researcher studies a representative sample of the target population. A sampling error occurs if the sample

selected from the study is not representative of the study population (Bryman, 2012). The two main sampling methods are probability and non-probability. Probability or representative sampling refers to the approach where every unit in the population has an equal chance of being included in the sample (Bryman, 2012; Sarantakos, 2012; Saunders et al., 2016). According to the foregoing authors, probability sampling is categorised into simple random, systematic random, stratified random, cluster and multi-stage sampling. Probability sampling method is more robust compared to non-probability method because every unit in the population has a non-zero chance of being selected to the sample and the findings can be generalised to the population (Grafstrom 2010, Tille & Wilheims 2017).

Bryman (2012) argued that sample size is a key parameter when undertaking a sample survey as it determines the quality of the survey estimates. The author further opined that there is no absolute answer to the ideal sample size for a study. However, increasing the size of a sample increases the likely precision of the outcome. A robust sample size is computed by taking both theoretical concerns (sampling error, non-sampling error and selection bias) as well as practical considerations (survey cost, local logistics and researchers time) (Shively, 2011).

Probability sampling method was used to select respondents for this study. The sample size was computed using a formula used in calculating sample size for Demographic and Health Surveys (DHS) (Amoak et al., 2023; Islam et al., 2020). The formula uses the Relative Standard Error (RSE) as a measure of precision. The formula was used by FSD Kenya (2016) to derive a sample from the National Survey Evaluation Program (NASEP) framework of the Kenya National Bureau of Statistics (KNBS) for a national study on financial access in Kenya. The formula is as follows:

$$n = \frac{Deft^2 \left(\left(\frac{1}{P} - 1 \right) \right)}{\alpha^2} \Big/ RR$$

Where:

n = Sample size

Deft = Design Effect

P = Prevalence rate of the Reference Indicator

α = Relative Standard Error (RSE)

RR = Household Response Rate

In computing the sample size, the reference indicator used was the prevalence of individuals who were 18 years of age and above who had subscribed to mobile banking in Kenya which stood at stood at 25% of the banked population in 2019 (Central Bank of Kenya, 2021). The RSE was set at 10% (DHS recommends between 5-10% including references) while design effect and response rates were assumed at 1.5 and 90% respectively. Substituting these values into the formula above results in the following sample size

$$n = \frac{1.5\text{^}2\left(\frac{\left(\frac{1}{0.25}-1\right)}{0.1\text{^}2}\right)}{0.9} = 2.25\left(\frac{(3)}{(0.01*0.9)}\right)$$

$$n = 750n = 750$$

The total sample size targeted therefore was 750 households. The pilot study revealed high levels of vacant households due to the prevailing Covid-19 which had rendered many people jobless. To ensure that the study sample was not impacted negatively, we increased the number of households to 1140. Table 3.1 shows the distribution of the households. The study utilized NASSEP developed and maintained by KNBS for household-based surveys. The household sampling frame was developed after every Kenya Population and Housing Census (KPHC) to conform to the changes in population structure and spatial distribution. The NASSEP V sampling frame was composed of 5,360 clusters selected with Probability Proportional to Size (PPS) from 96,251 Enumeration Areas (EAs) based on the population and housing census in Kenya.

In the development of NASSEP V, the 47 counties were stratified into 92 sampling strata, that is, urban and rural strata in 45 counties in addition to Nairobi and Mombasa counties that are wholly urban. For this study, a total of 30 clusters spread across the entire area of study were selected from the NASSEP V sampling frame using equal probability sampling methods since the Enumeration Areas were standardized to a measure of size of approximately 50-149 households during listing. The selection was done independently within each stratum. A fixed take of 38 households was selected independently from each cluster using systematic random sampling. Other studies that have used the NASSEP V framework include FinAcess (2019, 2021) that carried out a national study on financial inclusion in Kenya. A full list of the sampled clusters is in Appendix 9.

Table 3.1 Distribution of respondents by households

County	Number of clusters 38 homes each	Total households
Nairobi	10	380
Machakos	9	342
Kajiado	5	190
Kiambu	6	228
Total number of clusters	30	1140

Source: KNBS NASSEP V Framework

3.6 Data collection methods and procedures

Primary data was collected from the sample population of the study between June and July 2021. A questionnaire was administered to the selected households by a trained researcher. Screening questions were used to identify the members of the household who were above 18 years old and had subscribed to mobile banking. Those who did not meet the screening criteria were not interviewed.

A seven point Likert type scale questionnaire (ranging from 7 - Strongly agree to 1- Strongly disagree) was used for the study. Likert type scales are commonly used as a means of studying attitudes with responses ranging between two extreme positions and are denoted by a numerical scale (Bryman, 2012; Sarantakos, 2012; Saunders et al.,

2016). The questionnaire started with an introduction of the survey, inviting respondents to take part in the interview and assuring them of confidentiality of the data that they would share according to the questionnaire. The next section comprised screening questions to determine if the respondents were 18 years old and above and if they had mobile banking. If the respondent did not have mobile banking, the interview ended.

Section A, Part 1 focussed on the respondents' attitude (independent variable) towards mobile banking and was adopted from the measurement scales of Perceived Usefulness and Perceived Ease of Use as developed by Davis (1989) and adapted to the study using literature from previous studies. Part 2 featured questions on social networks and measured strength of ties among individuals in a social network (Granovetter, 2018; Emerson, 1976). Part 3 covered questions that established the support respondents received from their social network while part 4 questions focussed on the extent and frequency of mobile banking usage by the respondents. Part 5 sought to know to what extent the respondents found the mobile banking trustworthy and safe to use. Section B contained demographic information of the respondents and included gender, age, employment status, level of education, and income levels. The questionnaire ended with a section that tested the competence of the respondents in answering the questions provided.

Computer assisted personal interview (CAPI) was used to collect data. Studies have shown that CAPI has gained increased significance because it allows for lower costs, faster results and better data quality compared to paper aided personal interviews, PAPI (Ngahu, 2015; Squires et al., 2012). CAPI integrates data collection, data entry, editing, coding and cleaning into a single process, thereby saving time by quicker turn-around time while lowering costs by eliminating post interview processing while also improving data quality by eliminating error-prone data entry (Baker 1992),

In a study that compared efficiency and accuracy of data collection using Pen and

Paper interviewing (PAPI) and CAPI in doing a household water management study, PAPI was found to be overly complicated and time consuming in terms of accuracy of data and efficiency of data collection compared to CAPI which used survey software on android tablets. Interview duration using CAPI was decreased by 0.55% while embedded skip patterns and answer lists lowered data entry errors relative to PAPI (Leisher, 2014; MacDonald et al., 2016). Leisher (2014) compared CAPI and PAPI data collection in conservation projects using household surveys and found that cost per completed interview for CAPI was 74% less than PAPI while average time per interview for CAPI was 46% less than PAPI. MacDonald (2016) found that enumerators expressed excitement of using CAPI because it was lightweight and transportable in the field.

This research selected ODK ONA application platform to collect data which is an open source android application (ODK-X, 2021). The application runs on android operating software which was the dominant software for most mobile phone users in Kenya accounting for over 90% of the subscribers (Taylor, 2022). ODK also met the threshold of agility and security described above which informed our choice of the platform. ODK has been used by development organisations to collect data around the world for social impact (ODK-X, 2021). The complexity of data collection at national and international level by development organisations gave us the reason to believe that ODK would be suitable for academic research that was taking place in one country.

To activate CAPI, the questionnaire was digitised and uploaded on ODK portal. The administrator, who was part of the data collection assistants created profiles of all the recruited enumerators. The platform was available as an application on Google Play Store and each enumerator downloaded the ODK App on their smartphones or tablets. This process ensured that no one could access the research account of this study except if the administrator had created their accounts at the back end.

The administrator relied on the main researcher to authorise the creation of accounts for

the enumerators. Each enumerator could only access their own account within the study research folder on the App. Equipped with the digitised questionnaire in their mobile devices, the enumerators administered the questionnaires to the respondents in the field by moving from one household to the next. On completion of each interview session, the enumerator submitted the questionnaires to the database which was only accessible to the main researcher and the administrator. This measure ensured that the enumerators had no opportunity to amend a questionnaire after submission.

A total of 12 enumerators were recruited on the basis of living within the region of the study to adhere to controlled movement because of the Covid-19 pandemic. Other criteria included prior experience with household surveys and use of CAPI. They were required to have android smart phones to enable them to download the survey tool for use. The enumerators moved in pairs during the data collection, and were accompanied by a field guide from KNBS, and a village elder in each cluster in the rural areas and informal urban settlements and estate management representatives in the case of urban areas in each cluster. In each county, the enumerators first reported to the KNBS County Statistics Officer (CSO) to seek approval and clearance to enter the clusters in each respective county.

The main researcher equipped the enumerator with an introduction letter from Strathmore Business School (SBS) which explained the purpose of the study. The letter also confirmed that the study had been approved by the Strathmore University Ethical Review Board as well as the National Council for Science and Technology (NACOSTI). The CSO gave clearance to the enumerators and assigned them a local guide who would accompany them to the field. Two weeks prior to the study, the enumerators were trained on the content and structure of the questionnaire, how to administer it to the respondents using the software on their mobile devices and how to transmit the completed questionnaire to the central database at the end of each session. Each enumerator practised with dummy information on how to use the tool.

A WhatsApp group was created by the main researcher two weeks before carrying out

the pilot study during which enumerators exchanged their experiences in testing the use of the digitised questionnaire. The daily interactions helped the enumerators to master the use of the digitised questionnaire through their smart phones or tablets. The testing was guided by the main researcher on the part of understanding the details of the survey questions while the data base administrator helped to familiarise the enumerators on navigating the online platform. The practise also helped to test the tool and helped the data administrator to refine the process of data collection and data transmission including capturing of the GPS location of every enumerator at the time of collecting the data. Each survey tool captured the time each survey was commenced and the time it was closed. This time stamps helped to estimate the time taken with each respondent.

3.7 Research quality

According to Bryman (2012), pilot studies give the researcher the opportunity to test survey instruments. It is a trial run in preparation for the complete study during which the researcher pre-tests the survey questionnaire for quality and clarity of questions (Van Teijlingen & Hundley, 2001). To ensure quality of data, validity and reliability tests were also carried out during the pilot study.

3.7.1 Pilot study

A pilot study was carried out prior to the main study. The first step involved testing the questionnaire with three university professors who were experts in research methods, data analysis and marketing. Two of the three university professors were the researcher's academic supervisors. Three industry experts on mobile banking and three research experts at the KNBS were also requested to test the tool. From the foregoing tests, amends were made on flow, structure and content of the questionnaire. The next step was to conduct a pilot study among 60 households, which were selected from three KNBS cluster areas in Nairobi, Kiambu and Machakos. The cluster areas that participated in the pilot study were not included in the main study. Response and analysis of the findings from the pilot study were used to make improvements to the final survey questionnaire.

The pilot study was used to test logistics of gaining entry to the sampled households and the procedures of data collection within the prevailing restrictions due to the Covid-19 pandemic. The researcher worked through the KNBS by involving the CSO in the counties from where a KNBS officer was assigned as a guide to accompany the enumerators to the field. The KNBS local guide led the enumerators to the village elders or estate management office who in turn helped to locate the sampled households using the sample listing. This system was found helpful in gaining entry to households since the household owners could identify with the local leaders accompanying the enumerators. Where the household residents were absent at the time of the visit, the local leader organised for the enumerators to make a call and book for a more appropriate time after contacting the owners of the household. This experience was useful in allocating more days for the main study to accommodate call backs.

In view of the prevailing Covid-19 pandemic, the study adhered to the government-issued health protocols of wearing of masks, sanitizing hands or washing with soap and water as well as maintaining social distance. To adhere to social distancing protocols, the enumerators carried out interviews in open spaces within the household such as an open veranda or in the compound within the homestead. They were not required to enter the respondents' houses. They also carried sanitizers and additional face masks in case the respondents did not have their own and needed reassurance of protection when participating in the survey.

Other challenges that were encountered during the study was access to people's homes during the Covid-lockdown. This challenge was mitigated by being accompanied by filed guides from the KNBS who were well known in the localities. They assisted in introducing the enumerators and giving the residents confidence to participate in the study.

Another limitation was lack of internet access in most areas to enable the use of CAPI. To overcome this limitation, each of the respondents was equipped with data bundles to use to transmit the data to the central server.

3.7.2 Validity and reliability tests

Validity and reliability tests were carried out to establish quality of the questionnaire. According to Drost (2011), validity is concerned with how well the concept is defined by the measure(s) whereas reliability relates to the consistency of the measure(s). The study used Cronbach alpha to measure reliability. Cronbach alpha was developed by Cronbach (1951). It defines the extent to which measures for same construct or latent constructs are related. The alpha lies between 0 and 1. A higher alpha denotes a good internal consistency of the measures. The rule of thumb for the coefficients; aa > 0:9, Excellent, aa > 0:8 Good, aa > 0:7, Acceptable, aa > 0:6, Questionable, aa > 0:5, poor and aa>0:5, Unacceptable. This study used Cronbach's Alpha coefficient to measure internal consistency because the tool had multiple Likert-type scale questions and this formulation would determine if these scales were reliable.

Different authors have in the past recommended different cut off points for reliability. Tavakol (2011) recommends a maximum Cronbach's alpha coefficient of 0.9., Cooper and Schindler (2006) suggest a Cronbach's alpha coefficient ranging between 0.7 and 0.9, Gliem and Gliem (2003) opined that a Cronbach alpha value of 0.7 is reliable while Bagozzi and Yi (2012) recommended a value of 0.5 as reliable. The current study used a Cronbach's alpha of 0.7 as the cut off threshold to measure internal consistency. Reliability tests were carried out during the pilot phase and during the main study. Table 3.2 shows the results of the reliability tests carried out during the pilot study. The results reveal that all constructs had Cronbach alpha of greater than 0.7, which denotes that they were all above acceptable levels. Table 3.2 shows the results of the reliability tests during piloting.

Table 3.2 Reliability tests during pilot stage

Variable	N	N of Items	Cronbach's Alpha	Conclusion
Perceived Usefulness	30	08	0.812	Reliable
Perceived Ease of Use	30	06	0.838	Reliable
Strong ties	30	05	0.861	Reliable
Weak ties	30	04	0.928	Reliable
Extent of usage	30	03	0.866	Reliable
Frequency of usage	30	03	0.888	Reliable

Source: Researcher (2022)

Confirmatory factor analysis (CFA) is an important analytical tool for testing for reliability and validity of measurement indicators. Confirmatory factor analysis was conducted using maximum likelihood estimation method, implemented in LISREL 8.80. Items with low factor loadings and high correlation with other factors were removed from the model, to improve model fit. The purification process resulted in four items being removed from their respective scales (one each from Perceived Usefulness, Perceived Ease of Use, Weak Ties, and Strong Ties). All scales were checked for sufficiency of the remaining items to capture the construct's domain, and they were found satisfactory.

Table 3.3 presents details of the factor loadings, t-values, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's alpha values. The t-values are significant at 1% for all estimated items (considering the critical t value of 2.65) and all factor loadings are above the 0.5 minimum threshold recommended by Hair et al. (2014). The AVE values are all above 0.5. Cronbach's alpha values for all constructs exceeded the minimum cut off of 0.7, indicating significant reliability and convergent validity of the constructs in the conceptual model. The fact that the observed indicators loaded on their predetermined latent constructs and in view of absence of cross-loadings, demonstrate discriminant validity of the measures.

Table 3.3: Confirmatory factor analysis results

Construct/Measures (Composite reliability; Average variance extracted; Cronbach alpha)					Factor Loadings	t-values
Perceived Ease of Use (PEU) CR =0.915, AVE =0.663, CA = 0.872)						
PEU2					0.814	Fixed
PEU3					0.831	19.817
PEU4					0.806	18.996
PEU5					0.860	20.810
PEU6					0.817	19.363
Perceived Usefulness (PU) (CR = 0.892, AVE =0.572, CA = 0.834)						
PU2					0.753	Fixed
PU3					0.738	15.242
PU4					0.777	16.131
PU5					0.801	16.693
PU6					0.784	16.308
PU7					0.710	14.617
Weak Ties (CR =0.955, AVE =0.876, CA = 0.945)						
WTIES1					0.931	Fixed
WTIES2					0.958	39.205
WTIES3					0.919	34.220
Strong Ties (CR =0.938 , AVE =0.791, CA = 0.919)						
STIES1					0.923	Fixed
STIES2					0.917	32.345
STIES3					0.906	31.296
STIES4					0.807	23.561
Extent of Use (CR = 0.932, AVE =0.82, CA = 0.865)						
EXT_USE1					0.911	Fixed
EXT_USE2					0.944	31.732
EXT_USE3					0.862	26.278
Frequency of Use (CR =0.936, AVE =0.830, CA =0.879)						
FREQ_USE1					0.912	Fixed
FREQ_USE2					0.873	27.468
FREQ_USE3					0.947	33.393
Chi-Square	D.F.	RMSEA	NFI	NNFI	CFI	SRMR
626.28	237	0.062	0.969	0.977	0.980	0.0325

Note: t-values ≥ 2.56 are significant at 1% Source: Researcher (2022)

The overall model fit was evaluated using generally accepted criteria in the literature. Following the recommendations of Bagozzi and Yi (2012), the following cut-offs were developed for the various indices: RMSEA ≤ .07, CFI ≥ .93, NNFI ≥ .92, and SRMR ≤ .07. According to Hair et al. (2014), a ratio of 3:1 or less is considered favourable for the normed $\chi 2$ test. For the study's model, $\chi 2/df = 626.38/237 = 2.64$, RMSEA = 0.062, NFI = 0.969, NNFI = 0.977, CFI = 0.980 and SRMR = 0.0325. Thus, the fit indices satisfy the recommended cut-off values and are an indication of a good fit of the measurement model.

3.7.3 Structural model estimation

Ordinary Least Squares (OLS) regression analysis was used to examine the relationship between the independent variable, moderator, and dependent variable. The hierarchical moderated regression procedure was used for the estimation. The sub-components of Consumer Technology Usage – "Frequency of Usage" and "Extent of Usage" were the constructs for the dependent variable in the models. For each construct, three regression models were estimated.

In model 1, the control variables were regressed on the dependent variable. The model is as follows:

Dependent Variable = Frequency of Use (FUSE)

Dependent Variable = Extent of Use (EXTUSE

β is the regression coefficient, and $\varepsilon 1$ is the error term of the regression equation.

Model 1:

$FUSE = \beta o + \beta 1\text{-}22Ctrls + \varepsilon 1$

$EXTUSE = \beta o + \beta 1\text{-}22Ctrls + \varepsilon 1$

In model 2, the main effects (comprising the independent variables and the moderators were added to the model to estimate their effects on the dependent variable. The models are as follows:

$FUSE = \beta o + \beta 1\text{-}22Ctrls + \beta 23PUSE + \beta 24PEOU + \beta 25WTIES + \beta 26STIES + \varepsilon 1$

$EXTUSE = \beta o + \beta 1\text{-}22Ctrls + \beta 23PUSE + \beta 24PEOU + \beta 25WTIES + \beta 26STIES + \varepsilon 1$

In model 3, interaction terms created from various combinations of the independent variables and the moderator 4 combinations made from 2 each of independent variables and moderators were added to the model. The models are as follows:

$FUSE = \beta o + \beta 1\text{-}22Ctrls + \beta 23PUSE + \beta 24PEOU + \beta 25WTIES + \beta 26\ STIES + B27PEOUxWTIES + \beta 28PEOUxSTIES + \beta 29PUSExWTIES + \beta 30PUSExSTIES + \varepsilon 1$

$EXTUSE = \beta o + \beta 1\text{-}22Ctrls + \beta 23PUSE + \beta 24PEOU + \beta 25WTIES + \beta 26STIES + B27PEOUxWTIES + \beta 28PEOUxSTIES + \beta 29PUSExWTIES + \beta 30PUSExSTIES + \varepsilon 1$

To take care of potential multicollinearity, all variables used in the creation of interaction terms were mean-centred. The OLS regression equations are specified below. Because the model included 22 levels of control variables, they were designated as *B*ctrls to simplify the writing of the equation.

The above equation models were used to test the hypotheses which were informed by the study objectives and research questions below:

Objectives	Research Question	Hypothesis
Objective 1 To determine the effect of consumer attitudes on technology and consumer technology usage.	1. What is the effect of consumer attitudes on technology and consumer technology usage?	**H1:** Favourable perceived usefulness of a technology is positively associated with the extent and frequency of consumer technology usage. H2: favourable perceived ease of use of a technology is positively associated with the extent and frequency of consumer technology usage.
Objective 2 Establish the effect of social networks on consumer technology usage.	2. What is the effect of social networks on consumer technology usage?	H3: Strong social network ties positively influence the extent and frequency of consumer technology usage. H4: weak social network ties positively influence the extent and frequency of consumer technology usage.
Objective 3 Establish the moderating effect of social networks on the relationship between consumer attitudes on technology and consumer technology usage.	3. What is the moderating effect of social networks on the relationship between consumer attitudes on technology and consumer technology usage?	H5: The relationship between perceived usefulness of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude. H6: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude. H7: The relationship between perceived usefulness of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude. H8: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude.

3.8 Operationalization of the study variables

Consumer attitude was the independent variable of this study and was operationalized using the constructs as defined in the Technology Acceptance Model (TAM), "Perceived Usefulness (PU)" and "Perceived Ease of Use (PEOU)" (Davis, 1989). The

measurement items were adopted from TAM's measurement scale which has been tested and validated through multiple studies (Agarwal & Karahanna, 2000; Chang et al., 2017; Curran & Meuter, 2005; Dabholkar, 1996; Davis, 1989; J.-S. Lee et al., 2003; X. Wang et al., 2021)

'Social networks', the moderating variable was operationalized using constructs of tie strength. The measurement items were derived from the constructs weak social network ties and strong social network ties (Bai et al., 2021; Boso et al., 2013; Emerson, 1976; Granovetter, 1977, 1985; J.-S. Lee et al., 2003; Lubben et al., 2006; Shane & Cable, 2002) Consumer usage of technology, the dependent variable was operationalised using the constructs of frequency of usage, and extent of usage of consumer technology usage. Researchers have in the past used frequency of usage and extent of usage to measure usage of technology by consumers (Adams et al., 1992; Amoroso & Hunsinger, 2009; Cialdini & Goldstein, 2004; Davis, 1989; Hogue, 1987, 1987; E. Kim & Lee, 1986; Raymond, 1985; Shirley Taylor & Peter A. Todd, 1995). Table 3.5 shows the actual measurements that were used for each construct.

Table 3.5: Operationalisation of key variables

Variable	Indicator	Measures	Scale	Type of data analysis	Supporting literature
Consumer attitude (Independent Variable)	Perceived Usefulness	Saves time Control over own finances Safe to use convenient Trustworthy	**7 point Likert type scale** 7- Strongly agree 1-Strongly disagree	Descriptive statistics Inferential statistics	(Cheng et al., 2006) (Wang et al., 2003) Davis (1989) Dabhokar (1996) Murray (1991) Lee et al. (2003)
	Perceived Ease of Use	Easy to use Easy to learn Easy to understand Easy to get support	**7 point Likert type scale** 7- Strongly agree 1-Strongly disagree	Descriptive statistics Inferential statistics	(Cheng et al., 2006;) (Wang et al., 2003) Davis (1989) Agarwal and Karahanna (2000) Curran and Meuter (2005)
Social networks of individual actors in a network (Moderating Variable)	Strong ties	Closeness of relationship Long duration of close relationship Frequent interactions Depth of interactions	**7 point Likert type scale** 7- Strongly agree 1-Strongly disagree	Descriptive statistics Inferential statistics	(Bai et al., 2021) Boso et.al (2013) Emerson (1976) Granovetter (1985) Lee etal (2003) Shane and Cable (2002)
	Weak Ties	Acquaintances Infrequent interactions		Descriptive statistics Inferential statistics	(Lubben et al., 2006) Boso et al. (2013) Emerson (1976) Granovetter (1985) Lee et.al. (2003) Shane and Cable (2002)
Usage of technology (Dependent Variable)	Frequency of use	Number of times a customer uses a technology in a given period of time	**7 point Likert type scale** 7- To a very large extent 1-Not at all	Descriptive statistics Inferential statistics	(Amoroso & Hunsinger, 2009) Raymond (1985) Kim and Lee (1986) Hogue (1987) Davis (1989)
	Extent of use	Types of uses of a technology by a consumer	**7 point Likert type scale** 7- To a very large extent, 1-Not at all	Descriptive statistics Inferential statistics	(Shirley Taylor & Peter A. Todd, 1995) Adams et al. (1992) Steinfeild (1985) Bergeron (1986)

Source: Researcher (2022)

3.9 Ethical considerations

The study upheld ethical standards throughout the research process. The research

observed the research guidelines of Strathmore University. The survey tool was taken through a rigorous testing process with university professors and industry experts to ensure that questions were clear and would not cause confusion to the respondents. The pilot study helped to assess the level of clarity and the feelings of the respondents when interacting with the questions.

The questionnaire opened with an introduction by the enumerator who explained to each respondent the purpose of the study. The respondents were informed of their rights to accept or decline the study or parts of the study. The enumerators were trained to give the respondents time to ask for clarifications before accepting to proceed with the interview. A letter of introduction was obtained from Strathmore University which explained the purpose of the study and gave assurance of confidentiality to respondents regarding the information they provided during the interview. The letter also gave contacts of the study supervisors and their contacts in case the respondents felt the need to seek further clarifications.

Respondents were coded and their names and contacts were not included in the questionnaire to ensure maximum confidentiality. The study was approved by the Strathmore University Institutional Ethics Review Committee (SU-IERC). The researcher was issued with a letter of approval valid for one year to carry out data collection. The SU-IERC reviewed the study proposal, data collection instrument, respondents consent form, and letter of introduction by the researcher to the respondents.

As a requirement by Strathmore University, the researcher obtained a license valid for one year from National Commission for Science, Technology and Innovation (NACOSTI) to carry out the research. NACOSTI issued the main researcher with the licence for data collection in the country after reviewing the study proposal, survey instrument and authorisation letter from Strathmore University and SU-IERC. Other ethical considerations included avoidance of harm to the participants. This ranged from consideration of emotional risks, embarrassments and discomfort of the interview

process which could potentially cause anxiety, pain, or stress. For example, the enumerators only interviewed each respondent at a time within each household in order to ensure their privacy from other family members. Respondents were requested to give consent to participate after being assured of privacy and confidentiality of their information as well as anonymity of their identity (Bryman, 2012; Sarantakos, 2012; Saunders et al., 2016).

The main researcher was issued with an introductory letter by KNBS which the enumerators used to introduce themselves to the survey respondents. In addition, a KNBS field officer accompanied the enumerators to the field and introduced them to the village elders in the urban informal settlements and residential estate management representatives who served as the trusted liaison between the enumerators and the local residents. This approach gave the enumerators reassurance of safety and reduced the risk of being turned down from carrying out the study.

3.10 Chapter summary

This chapter presented the methodological approach of the study. The scope included the research philosophy, design, and methodology. Data collection methods and analysis were discussed beginning with a discussion of the various existing approaches and justifying the positivist approach which was used in this study. The study used CAPI for data collection and selected the sample from NASEP framework from the KNBS. A pilot study was carried out to test the research questionnaire and also to improve on the data collection process including testing the research quality. The chapter concluded by outlining the ethical considerations that were observed throughout the data collection phase of the study.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter focuses on data analysis and starts by presenting the response rate, followed by descriptive statistics of the respondents' characteristics using a frequency tables, mean scores, mode and standard deviations. Findings from the inferential statistics are presented later in the chapter using correlation and regression analysis.

4.2 Respondents screening and response rate

The study sampled residents in 1,140 households in four counties in Kenya: Kajiado, Kiambu, Nairobi and Machakos which are also referred to as Nairobi Metropolitan. Respondents were over 18 years of age and had subscribed to mobile banking. Eligible respondents were identified through screening questions before administering the questionnaire. From the sampled 1,140 households, 882 (77.4%) households were occupied at the time of the study. The other 258 (22.6%) were vacant as many heads of households had lost their jobs or businesses due to the Covid-19 pandemic.

A total of 1,475 residents who were over 18 years of age were screened in the households and 425 individuals accounting for 29% of the study population had subscribed to mobile phone banking. The 29% users of mobile banking can be explained by the low penetration of mobile banking in Kenya. According to FinAcess (2019), only 25% of the banked population in Kenya had adopted mobile banking service in 2019.

4.3 Respondents' demographics

4.3.1 Respondents' competence

A three-item scale was used to assess the respondents' competence. The items requested the respondents to indicate the extent to which the questionnaire dealt with issues that they were knowledgeable about, that they were confident about their answers, and the extent to which the answers reflected their situation. The responses were indicated on a scale of 1 to 7, where 1 indicated "strongly disagree" and 7

indicated “strongly agree”. The relevant study results are depicted in Table 4.1.

Table 4.1: Respondents’ competence

Variables		*Respondent competence items*		
		RC1	*RC2*	*RC3*
Respondent competence items	RC1: The questionnaire deals with issues I am very knowledgeable about	1		
	RC2: I am completely confident about my answers to the questions	.597**	1	.
	RC3: I am confident that my answers reflect my situation	.571**	.704**	1
Min		4	4	4
Max		7	7	7
Mean score		6.45	6.52	6.56
Standard deviation		0.72	0.67	0.62
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Primary data (2021)

Table 4.1 shows that the minimum score on each item was 4, indicating that none of the respondents disagreed with any of the items. Thus, it was established that the respondents were confident about their responses and were knowledgeable about the issues under study.

4.3.2 Respondents’ characteristics

After screening the target respondents, the study sought to establish the respondents’ demographic characteristics. The respondents were requested to indicate their gender, age, employment status, highest level of education, and income bracket. They were also requested to indicate how long they had used a mobile phone and how many mobile devices they used. Furthermore, they were asked how long they had been operating a bank account, and whether they had subscribed to mobile money services. Mobile money services refers to electronic store of value on mobile wallets created on sim cards by telco companies, while mobile banking refers to the use of mobile banking device to access money held in bank accounts.

Finally, they were asked to indicate how many people in their households were above 18 years of age. As depicted in Table 4.2, while there was little difference between the

number of male (50.4%) and female (49.6%) respondents, the data shows that majority of the respondents were between the ages of 20 and 30 years (30.4%) and 31and 40 years (42.4%). Majority of the respondents (65.4%) earn an income below Kshs 50,000 while 65.6% had used a mobile phone for more than five years. Table 4.2 further depicts the respondents' demographic characteristics by gender, age category, employment status, educational level and income level. In addition, data on their mobile phone usage and ownership as well as their bank account usage is provided.

Table 4.2: Respondent characteristics

Variable		*Count*	*Per cent*
Gender	Male	214	50.4
	Female	211	49.6
	Total	425	100.0
Respondent Age Category in Years	Below 20	4	0.9
	20-30	129	30.4
	31-40	180	42.4
	41-50	77	18.1
	51-60	32	7.5
	Above 60	3	007
	Total	425	100
Employment Status	Student	17	4.0
	Self Employed	204	48.0
	Salaried worker	179	42.1
	Unemployed	23	5.4
	Retired	2	.5
	Total	425	100.0
Highest Level of Education	Up to Primary School	35	8.2
	Up to Secondary School	198	46.6
	Up to First Degree/college	180	42.4
	Up to Master's Degree	12	2.8
	Total	425	100.0
Income Level	Up to Ksh 50,000	277	65.2
	Ksh. 51,000 - 100,000	105	24.7
	ksh. 101,000 – 150,000	17	4.0
	Ksh. 150,000 - 200,000	3	0.7
	Above ksh 200,000	2	0.5
	Refused to answer	21	4.9
	Total	425	100.0
Duration of Phone Usage	Less than one year	1	0.2
	Between 1 and 3 years	65	15.3
	Between 4 and 5 years	80	18.8
	Above 5 years	279	65.6
	Total	425	100.0
Number of Mobile Devices Owned	1.00	221	52.0
	2.00	124	29.2
	3.00	58	13.6
	4.00	15	3.5
	5.00	6	1.4
	11.00	1	0.2
	Total	425	100.0
Bank account Usage	Less than one year	4	009
	Between 1 and 3 years	95	22.4
	Between 4 and 5 years	107	25.2
	Above 5 years	219	51.5
	Total	425	100.0

Subscription to Mobile Money Services	Yes	423	99.5
	No	2	005
	Total	425	100.0
Number of people 18 years old and Above in Respondents' Household	1.00	93	21.9
	2.00	210	49.4
	3.00	82	19.3
	4.00	16	3.8
	5.00	18	4.2
	6.00	5	1.2
	7.00	1	0.2
	Total	423	100

Source: Primary data (2021)

Studies have found that demographic factors such as age, education, occupation and gender influence behaviour patterns including adoption behaviour (Al Ajam, 2013; Katona et al., 2011; Lazarsfeld & Merton, 1954). According to Aral et al (2009), people with similar social and demographic characteristics are more likely to exhibit similarity in their opinions and behaviours. For instance, Song and Chang (2012) concluded that people with more socio-economic resources and in particular education, were more active in seeking financial information. Park et al. (2007) established that gender and education level were significant moderating factors in the adoption of mobile technology among Chinese consumers. Similarly, Venkatesh and Morris (2000) argued that socio-demographic characteristics played an important role in technology adoption and observed that the most significant demographic factors that influenced technology adoption behaviour include gender, age, income and education. The respondents' characteristics are discussed in detail below.

4.3.3 Gender distribution

The study sought to establish the gender distribution of the respondents. As shown in Table 4.2, a total of 211 respondents accounting for 49.6% were female while 214 accounting for 50.4% were male. The difference between the males and females is insignificant meaning that the choice to have a bank account is almost equal between males and females. Similarly, a study in Kenya, FinAcess (2021) found that 35.6% females used mobile banking which was very close to the total number of males who used mobile banking who accounted for 36.6%, indicating that the difference between

the genders was insignificant.

The role of gender as a driver of technology adoption has had mixed findings. Venkatesh (2000) argued that although from a psychology perspective men and women were known to process decision making differently, there was no adequate research into gender differences in decision making regarding technology usage. Croson and Gneezy (2009) opined that women are more risk-averse than men, and that this tendency made men more likely to adopt and use technology compared to women. Similarly, while Huyer (2016) stated that the rate of agriculture technology adoption among women was significantly lower than that of men, Rola-Rubzen et al., (2020) opined that women in social networks are more likely to adopt technology as they benefited from social capital within such networks. This argument is supported by Venkatesh (2000) who posited that while men were influenced by their attitude towards using technology, women were strongly influenced by relationships (social interactions) in their decision making process.

Dong and Zang (2011) argued that gender influenced consumer perceptions towards adoption and usage of technology, while Riquelme and Rios (2010) examined the moderating effect of gender on the adoption and usage of technology including mobile banking and found that ease of use had a stronger influence on female respondents. On the contrary, Faqih and Jaradat (2015) found that gender had no moderating role in the adoption of mobile commerce in a developing country. This conclusion was also supported by Bigné et al. (2015) whose study in Spain and China demonstrated that men and women did not show any different attitudes towards mobile technology usage in Spain where penetration was at 86%; but in China with a penetration rate of 20%, the moderating effect of gender still existed. Studies on agricultural technology adoption have argued that there exists large gender disparities in the rate of adoption and usage due to limited capital, education, skills training and information among women compared to men (Huyer, 2016; Klugman et al., 2014; Rola-Rubzen et al., 2020). Further, Klugman et al. (2014) argued that in developing countries, 21% fewer women than men had access to a mobile phone.

4.3.4 Age distribution

The study sought to establish the age distribution of the respondents. The respondents between 31 and 40 years (42.4%) together with those between 21 and 30 years (30.4%) constitute the majority (72.8%) of the sample respondents. This age bracket (21-40 years) is made up of people in their early and mid-life stages of their career and family life. This is also the age category that is most technology-aware and therefore willing to explore technology usage (Al Ajam, 2013; Katona et al., 2011). The lowest category of users was that of respondents above 60 years of age who accounted for only 0.7%.

The findings agree with a study by FinaAccess (2021) which found that the age bracket that was actively engaged in formal financial access was between 26 years and 55 years. The highest level of exclusion were the youth between 18 and 25 years where up to 22.5% had no access to financial services and the older generation above 55 years where 14.9% had no access to formal financial services. The highest access to formal financial services was between 26 – 35 years (90.8%), 36- 45 years (91.1%) and 46 – 55 years (89.9%).

There have been mixed views on the relationship between age and technology usage. According to Niehaves and Plattfaut, (2014), there exists an age-related digital divide which prevents elderly people from using technology; this is despite technology being seen as a means of enhancing their quality of life by increasing the period of their lives when they remain independent. On the contrary, Rogers (1998) and Chung et al. (2010) argued that there existed a negative relationship between technology usage and age. This view was supported by Hall and Mansfied (1975) who argued that older workers were more amenable to conform to others' suggestions because they were more concerned about pleasing others.

Researchers who support the view that younger people have a higher affinity towards technology usage compared to older people argue that younger adults are more interested in using new technologies to search for product information and compare and

evaluate alternatives (Wood, 2002). This view is supported by scholars who hold the view that information processing and retrieval from memory and attention span declines with age (Al Ajam, 2013; Katona et al., 2011; Venkatesh & Morris, 2000; Yi et al., 2005). The foregoing authors examined the effect of age and gender on technology usage and found that there was significantly greater influence among younger female consumers. Wattal and Rachela (2010) found usage of blogs by younger people to be significant and a similar conclusion was made by Venkatesh et al. (2003) who found a direct effect of age on usefulness perceptions for both short-term and long-term usage, and concluded that age had a moderating effect on perceived usefulness and perceived ease of use of technology.

However, other studies found contrary findings: in Malaysia, older consumers were more likely to adopt m-commerce compared to younger consumers (Chong et al., 2012). This view was supported by Hall and Mansfied (1975) that older workers were more amenable to conform to others' suggestions because they are more concerned about pleasing others and have a higher need for affiliation with co-workers.

4.3.5 Distribution of respondents by occupation

Majority of the respondents (48%) were self-employed, followed by salaried workers (42.1%). This shows that mobile banking is mostly used by those with active occupations - both the self-employed and salaried workers. It is likely that this group of mobile banking users look for convenience in accessing their money to save on time that they would spend visiting a bank. Combined, this group accounted for 90% of the respondents who had a source of income. It is therefore evident that there is a correlation between income and usage of technology.

4.3.6 Distribution of respondents by monthly income

As shown in Table 4.2, about two-thirds (65.2%) earned up to Kshs. 50,000 followed by those whose income was between Kshs. 51,000 and Kshs.100,000 (24.7%). The results indicate that the majority of the users could be in low levels of employment and self-employment in micro and small enterprises. This category of earners are likely to

prefer mobile banking because of the convenience in saving time instead of going to the bank in order to dedicate more time to their businesses.

While some empirical studies have reported that individual characteristics such as income have significant impact on technology usage, other studies argue that these factors are not significant. Homburg and Giering (2001) for instance opined that income had a strong impact on choice and decisions because people with higher income levels were likely to achieve a higher level of education. Individuals were therefore likely to engage more in information processing and evaluation prior to decision making. In a literature review on consumer innovativeness, Kaushik and Rahman (2014) found that many studies had concluded that income and age were significant predictors of new product adoption compared to education, marital status and family size. Similarly, Mann and Sahni (2012) noted that higher earnings influenced the adoption of electronic banking channels. On the contrary, Porter and Donthu (2006) argued that lower income correlates with Perceived Usefulness of new technologies. Additionally, Venkatesh and Morris (2000) study found income and education to be non-significant predictors of intention to adopt technology.

4.3.7 Distribution of respondents by level of education

The results in Table 4.2 show that majority of the respondents (46.6%) had secondary school education, and another 42.4% had undergraduate education. The data suggests that usage of mobile banking services increases with level of education. FinAcess (2021) established that over 98.5% of consumers with tertiary education in Kenya had access to formal financial services and products compared to 64.2% of those with no education.

Education has been considered in many studies in different time periods as an important individual characteristic that influences technology adoption and usage. Over thirty years ago, Marshall and Heslop (1988) argued that higher education levels and employment status were positively related to ATM usage and Davis and Davis (1990) opined that education was indicative of a potential adopter's ability to learn, and this

capability positively influences beliefs towards technology usage. These findings were similar to that of Leblanc (1990) who found that users of bank ATMs were more highly educated. A decade later, Lohse et al. (2000) argued that consumers with higher education levels tended to also have a higher income and were more likely to own more technology devices such as computers, mobile phones, and access to the internet and similarly, Monsuwé et al. (2004) studied the factors that influenced consumers to shop online and concluded that the higher the education that a consumer had, the more comfortable they were in using new technology. Nzomoi et al. (2007) demonstrated that highly educated farmers and marketers were better adopters of improved technologies because they had more exposure to new technologies and innovation and therefore were more receptive and willing to adopt new ideas.

In contrast, a study on technology adoption in a Canadian University Zhou and Xu (2007) among full time faculty staff found that females had lower confidence and less experience using computers compared to their male counterparts, despite having similar education levels (Zhou & Xu, 2007). Relatedly, Venkatesh et al. (2014) found that education was not a strong predictor of new product adoption. This implies that being more educated may not always lead to technology adoption and usage.

4.3.8 Respondents' length of phone usage

The respondents were asked to indicate how long they had been using a mobile phone. Some 65.6% had used a mobile phone for more than five years showing that mobile phone usage in Kenya had penetrated for a reasonable time. Another 15.3% had used the phone between 1-3 years and 18.8% had used it for between 4 and 5 years. This information shows that mobile phone usage had matured among the respondents thereby creating an enabling environment for mobile banking usage. According to CAK annual report (2021), mobile telephony subscriptions had increased from 40 million in 2016 to 64 million in 2021. The report further indicated that digital technologies facilitated development by providing opportunities for countries to accelerate growth and connectedness. Further, as the world emerges from the Covid-19 pandemic, digital inclusion will enhance timely access to essential services and

improve productivity and efficiency.

4.3.9 Respondents' number of mobile devices owned

Respondents were asked to indicate the number of mobile devices they owned. 52% had one device, 29.2% had two devices, while 13.6% had three devices. The data shows that the usage of mobile devices among the respondents was quite high implying a high level of adoption and usage.

The foregoing finding is not surprising. According to CAK statistical report (2022), mobile phone devices stood at 59.58 million in a country with a population of 48.7 million people, showing a 122% mobile phone penetration. It is argued that the explosive growth of mobile subscriptions in the world is driven by reduced costs, increased computational power and ease of use. By 2021, there were 8.6 billion mobile subscriptions in a world of 7.6 billion people representing a 110% subscription (Statistica, 2021).

4.3.10 Respondents' duration of having a bank account

The data portrayed in Table 4.2 shows that slightly more than half (51.5%) had been operating a bank account for more than five years. Those who owned a bank account between 4 to 5 years were 25.2%, followed by those who had owned a bank account for 1 to 3 years. The data shows a high adoption of banking services for a long time among the respondents and would be useful in the study in explaining how long the respondents had used banking services compared to the period they had been using mobile banking services.

4.3.11 Subscription to mobile money services

The study sought to know how many of the respondents had subscribed to mobile money services. While mobile banking refers to the use of the mobile device as a channel of accessing banking services, mobile money refers to the electronic value of money maintained by telcos. A very high proportion (99.5 per cent) of the respondents had subscribed to mobile money services compared to 25 per cent who had subscribed

to mobile banking. This can be attributed to the fact that mobile money services was the first money transfer and payment solution via mobile telephone. Mobile money services remain the biggest competitor to banks in Kenya due to its convenience, ease of subscription and ability to take up unsecured overdraft facilities (Amrik & King, 2015).

4.4 Descriptive statistics for the study variables

This section starts with validating the items used to measure the study variables. The section then presents descriptive statistics of the individual items that make up the constructs. All items were measured on a scale of 1 to 7; details of mean score, standard deviation and coefficient of variation per item are presented. Skewness and kurtosis values are computed to assess the normality of the various items. The results presented in the tables indicate that the distribution of scores on each item is satisfactorily normal as both the skewness and the kurtosis indices obtained are very much within the recommended thresholds of "less than (4) and "less than (8) respectively (Kline, 2011).

4.4.1 Perceived Ease of Use (PEOU)

Results in Table 4.3 show very high and close scores on perceived ease of use with an aggregate mean score of (mean score = 6.30, SD = 0.83, CV= 13%). This means that most respondents agree that perceived ease of use had improved their experience with mobile banking. The highest scores were from the statement 'I find mobile banking flexible to interact with" (mean score = 6.38, SD= 0.789, CV= 12%) while the statement 'I find the use of mobile banking services clear and understandable' had the lowest score ; (Mean score = 6.22, SD= 0.878, CV= 14%)

Table 4.3: Perceived Ease of Use (PEOU)

Item code	*Item*	*Mean score*	*SD*	*CV %*	*Skewness*	*Kurtosis*
PEU2	I find the use of mobile banking services clear and understandable	6.22	.878	14%	-1.38	2.80
PEU3	It is easy for me to understand the use of mobile banking services	6.30	.852	14%	-1.34	2.14
PEU4	Overall, I find the use of mobile banking services easy	6.33	.816	13%	-1.65	3.02
PEU5	I find mobile banking flexible to interact with	6.38	.789	12%	-1.36	2.54
PEU6	Learning to use mobile banking is easy for me	6.27	.823	13%	-1.16	1.40
	Aggregate score	**6.30**	**0.83**	**13%**		

Source: Primary data (2021)

4.4.2 Perceived Usefulness (PUSE)

With regards to the variable Perceived Usefulness, the respondents were presented with seven statements to which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-7. A score of 1 indicated disagreement and a score of 7 indicated agreement with the statements. The findings show that respondents agreed that use of mobile banking was useful as shown by a mean score of 6.36 with an average deviation of 0.78. The question, "Using mobile banking services saves me time to do other important tasks" had the highest mean (M = 6.45, SD =0.716) which means that most respondents strongly agreed that use of mobile banking saved time.

Table 4.4: Perceived Usefulness (PUSE)

Item code	*Item*	*Mean Score*	*SD*	*CV%*	*Skewness*	*Kurtosis*
PU2	Using mobile banking services makes it easier for me to do my banking	6.33	.759	12%	-1.58	5.94
PU3	Using mobile banking services saves me time to do other important tasks	6.45	.716	11%	-1.40	2.25
PU4	I find the mobile banking systems useful in conducting my banking	6.30	.858	14%	-1.69	4.99
PU5	Using mobile banking services enables me to accomplish my tasks more quickly	6.36	.783	12%	-1.74	6.07
PU6	Using mobile banking makes it easier for me to carry out my tasks	6.38	.813	13%	-1.75	5.25
PU7	I find mobile banking useful	6.33	.734	12%	-.838	.072
	Aggregate score	**6.36**	**0.78**	**12%**		

Source: Primary data (2021)

4.4.3 Weak Social Network Ties (WTIES)

As shown in Table 4.5 below, the respondents were presented with three statements to which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-7 in order to measure the latent variable weak ties. A score of 1 indicated strong disagreement and a score of 7 indicated strong agreement with the statements. The findings show respondents were neutral that use of mobile banking was influenced by their weak social network ties as shown by an aggregate mean score of 3.97 with an average deviation of 2.15. The question "I put in lots of effort in developing and maintaining relationships with the right people to access new information on mobile banking services" had the highest mean (Mean score = 4, SD = 2.12) which means most respondents were neutral in their views. The average coefficient of variation was very high which shows lack of consistency in the set of questions.

Table 4.5: Weak Ties (WTIES)

Item code	*Item*	*Mean*	*SD*	*CV%*	*Skewness*	*Kurtosis*
WTIES1	I interact with my acquaintances to access new information about mobile banking services	3.98	2.18	55%	-.155	-1.46
WTIES2	I interact with personal friends to access new information about mobile banking services	3.94	2.15	55%	-.085	-1.44
WTIES3	I put in lots of effort in developing and maintaining relationships with the right people to access new information on mobile banking services	4	2.12	53%	-.110	-1.43
	Aggregate score	**3.97**	**2.15**	**54%**		

Source: Primary data (2021)

4.4.4 Strong Social Network Ties (STIES)

With regard to the variable Strong Ties, the respondents were presented with four statements in which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-7. A score of 1 indicated strong disagreement and a score of 7 indicated strong agreement with the statements. The findings as represented in Table 4.6 below show respondents were neutral with regards to strong ties that they help with mobile banking services as shown by an aggregate mean score of 3.63 with an average deviation of 2.17. The question "I have close relatives with whom I often interact on issues relating to mobile had the highest mean (M = 3.92, SD = 2.12) which means most respondents had average views on the interaction with close relatives on issues relating to mobile banking services.

Table 4.6: Strong Ties (STIES)

Item code	*Item*	*Mean*	*SD*	*CV%*	*Skewness*	*Kurtosis*
STIES1	I interact with my close relatives on issues relating to mobile banking services	3.83	2.08	54%	.006	-1.41
STIES2	I have close relatives with whom I often interact on issues relating to mobile banking services	3.92	2.2	56%	-.068	-1.50
STIES3	I have several relatives I trust so much that I discuss with them my personal banking matters	3.66	2.17	59%	.107	-1.49
STIES4	I have neighbours with whom I interact frequently on issues relating to mobile banking services	3.12	2.22	71%	.524	-1.28
	Aggregate score	**3.63**	**2.17**	**60%**		

Source: Primary data (2021)

4.4.5 Extent of use (EXTUSE)

Three statements were presented to the respondents to which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-5. A score of 1 indicated strong disagreement and a score of 7 indicated strong agreement with the statements. As shown in Table 4.7, the findings indicated that respondents moderately agreed that they used mobile banking to a large extent as shown by a mean score of 5.22 and a standard deviation of 1.33, which demonstrates a high level of consumer usage of mobile banking.

Table 4.7: Extent of use (EXTUSE)

Item code	*Item*	*Mean*	*SD*	*CV%*	*Skewness*	*Kurtosis*
EXT_USE1	I use mobile banking services a lot	5.33	1.31	25%	-.583	-.068
EXT_USE2	I use mobile banking services at all times	5.04	1.39	28%	-.464	-.434
EXT-USE3	Mobile banking is part of my life	5.28	1.28	24%	-.605	.165
	Aggregate Score	**5.22**	**1.33**	**25%**		

Source: Primary data (2021)

4.4.6 Frequency of use (FUSE)

The results in Table 4.8 reveal a moderate overall mean score on the frequency of usage (Mean= 5.12, SD=1.34 and CV=26%). This means that most respondents' frequency of usage of mobile banking services is moderate. The question, "how frequently do you use mobile banking services" had the highest mean score of 5.18, standard deviation of 1.31 and coefficient of variation of 25% while the question. "I often use mobile banking services for all my financial transactions" had the lowest mean score of 5.04, standard deviation of 1.39 and coefficient of variation of 26%. The coefficient of variation ranged between 25% and 28% implying that the variation in the responses concerning the frequency of usage of mobile banking was very low hence a reliable measure.

Table 4.8: Frequency of Usage (FUSE)

Item code	*Item*	*Mean*	*SD*	*CV%*	*Skewness*	*Kurtosis*
FREQ1	I often use mobile banking services for all my financial transactions	5.04	1.39	28%	-.483	-.269
FREQ2	My usage of mobile banking services is very frequent	5.15	1.31	25%	-.450	-.035
FREQ3	How frequently do you use mobile banking services	5.18	1.31	25%	-.475	-.058
	Aggregate Score	**5.12**	**1.34**	**26%**		

Source: Primary data (2021)

Dependent Variable = Frequency of Use (FUSE)
Model 1: FUSE = βo + β1-22Ctrls + Ɛ1
Model 2: FUSE = βo + β1-22Ctrls + β23PUSE + β24PEOU + β25WTIES + β26STIES + Ɛ1
Model 3: FUSE = βo + β1-22Ctrls + β23PUSE + β24PEOU + β25WTIES+β26 STIES + B27PEOUxWTIES + β28PEOUxSTIES + β29PUSExWTIES + β30PUSExSTIES + Ɛ1

Dependent Variable = Extent of Use (EXTUSE)
Model 1: EXTUSE = βo + β1-22Ctrls + Ɛ1
Model 2: EXTUSE = βo + β1-22Ctrls + β23PUSE + β24PEOU + β25WTIES+β26STIES + Ɛ1
Model 3: EXTUSE = βo + β1-22Ctrls + β23PUSE + β24PEOU + β25WTIES + β26STIES + B27PEOUxWTIES + β28PEOUxSTIES + β29PUSExWTIES + β30PUSExSTIES + Ɛ1

Where β is the regression coefficient, and Ɛ1 is the error term of the regression equation.

4.5 Regression estimates for consumer technology usage

In order to answer the research questions, the equations in Table 4.10 were created for both the frequency of use and extent of use. In model 1, the control variables were regressed on the dependent variable. In model 2, the main effects (comprising the independent variables and the moderators) were added to the model to estimate their effects on the dependent variable. In model 3, interaction terms created from various combinations of the independent variables and the moderators (4 combinations made from 2 each of independent variables and moderators) were added to the model. To take care of potential multicollinearity, all variables used in the creation of interaction terms were mean-centred. Because the model included 22 levels of control variables, control variables were designated as *B*ctrls to simplify the writing of the equation. Table 4.11 carries the regression estimates for the consumer technology usage constructs: Frequency of usage and Extent of Usage.

Table 4.11: Regression estimates for Consumer Technology Usage

	Frequency of Usage				**Extent of Usage**		
	Model 1	Model 2	Model 3		Model 1	Model 2	Model 3
Controls							
Gender (1 =Male)	.206**	.181*	.166**		.143**	.109*	.095*
Age bracket	-.084	-.069	-.076		-.087	-.082	-.080
Employment status	-.113	-.182*	-.159*		-.087	-.170*	-.161
Formal Education Level	.186**	.108*	.099		.106*	.039	.028
Income category	-.046	-.002	-.011		-.061	-.007	.004
Outside Travel (1= Yes)	.150**	.170**	.159**		.069	.094*	.071*
Phone type (1= smart)	.211**	.174**	.244**		.080*	.046	.083*
Years of phone use	-.189**	-.102**	-.074*		-.008	.101	.104
Number of mobile device	-.043	-.006	-.014		.019	.064	.052
Number of apps in use	-.018	-.014	-.022		-.011	-.006	-.006
Internet on Device (1= Yes)	-.183**	-.054	-.010		.183*	.335***	.284**
Years of bank account	.152*	.182*	.222*		.145*	.177*	.214**
Bank Type - KCB	.041	.026	.060		-.105	-.134	-.124
BankType- Equity Bank	-.322*	-.271*	-.235		-.284*	-.207	-.201
BankType- Coop bank	-.251**	-.220**	-.257**		-.231**	-.185**	-.185**
Bank Type - DTB	.404***	.325***	.261**		.612***	.615***	.630***
BankType - StanChart	.263**	.279**	.305***		.288***	.266**	.396***
Bank Type – ABSA	.511***	.450***	.529*		.531***	.458***	.546***
Bank Type – ABC	1.616***	1.230***	1.314***		1.473***	1.006***	1.048***
Years of Subcription	.189*	.111	.109		.148	.047	.039
Subscription Status (1= Yes)	.474***	.750***	.858***		.285**	.517***	.551***
Number of Adults in Household	-.079*	-.114**	-.108**		-.054	-.085*	-.078*
Main Effects							
Perceived Usefulness (PUSE)		.288*	.451*			.558**	.580**
Perceived Ease of Use (PEOU)		.339***	.248**			.135	.136
Weak Ties (WTIES)		-.032	-.016			-.023	-.011
Strong Ties (STIES)		.122**	.101**			.133***	.119**
Interaction Effects							
PEOU x WTIES			-.085*				-.046
PEOU x STIES			.138**				.028
PUSE x WTIES			-.055				-.062**
PUSE x STIES			.040				.065**
Model Fit							
R^2	.113	.225	.255		.096	.233	.251
ΔR^2	-	.111	.030		-	.136	.018
F of R^2	2.33	4.44	4.49		1.95	4.63	4.39
Adjusted R^2	.065	.174	.198		.047	.182	.194
VIF	1.577	2.497	4.894		1.901	2.497	4.894
Constant	4.617	4.365	3.925		4.306	4.028	3.904
Durbin Watson	1.901	1.631	1.643		1.658	1.658	1.703
*Significant at 10%, **Significant at 5%, *** significant at 1%. Critical t-values at 1.96 for 5% significance, 2.58 for 1% significance.							

Source: Primary data (2021)

4.5.1 Dependent variable: frequency of use (FUSE)

In model 1, all 22 control variables were regressed unto the dependent variable – Frequency of technology use. These factors together explain 11.3% of the variance in Frequency of Use, given F (402) = 2.337, p <.001. Out of the control variables, years of subscription is significantly related to the frequency of technology use. The Highest VIF is 1.577, indicating that multicollinearity is not a problem in the model. The Durbin-Watson statistic is 1.901, indicating that autocorrelation is also not a problem in this model.

The main effect variables of Perceived Usefulness (PUSE), Perceived Ease of Use (PUSE), Weak Ties (WTIES), and Strong Ties (STIES) were added to the analysis in model 2. The inclusion accounted for an additional 11.1% of the variance in frequency of use. Checks for VIF and Durbin-Watson Statistics reveal that there was no multicollinearity and autocorrelation in the model. The findings indicate that perceived usefulness is positively related to the frequency of technology use ($\beta = .288$, $p < .05$). In addition, Perceived ease of use is positively related to the frequency of technology use ($\beta = .399$, $p < .001$).

The interaction terms were added to the analysis in model 3. The coefficient of the product term of PUSE and STIES is positively related to the frequency of use ($\beta = .138$, $p < .05$). The variance inflation factor (VIF) and Durbin Watson values are at 4.89 and 1.64 respectively, within the acceptable ranges. The results indicate that the relationship between PUSE and Frequency of Use is strengthened at high levels of Strong Ties.

4.5.2 Dependent variable = extent of technology usage (EXTUSE)

All the control variables were estimated in model one, and all the variables accounted for 9.6% of the variance in the extent of technology usage. The model is significant at F (402) = 1.96, p <.05. The Highest VIF is 1.901, indicating that multicollinearity is not a problem in the model. The Durbin-Watson statistic is 1.65, indicating that autocorrelation is also not a problem in this model.

The main effect variables of Perceived Usefulness (PUSE), Perceived Ease of Use (PUSE), Weak Ties (WTIES), and Strong Ties (STIES) were added to the analysis in model 2. The inclusion accounted for an additional 13.6% of the variance in frequency of use. Checks for VIF and Durbin-Watson Statistics reveal that multicollinearity and autocorrelation are not an issue for the model. The findings indicate the Perceived Usefulness is positively related to the extent of technology usage ($\beta = .558$, $p < .01$).

The interaction terms were added to the analysis in model 3. The model explained an additional 1.8% of the variance in the extent of technology usage. From the results, the coefficient of the product terms of PEOU and WTIES is negatively related to extent of technology use ($\beta = -.062$, $p < .05$). This suggests that at higher levels of Weak Ties, the relationship between PEOU and Extent of Technology Usage is reduced. Further, the coefficient of the product terms of PEOU and STIES is positively related to the extent of technology usage ($\beta = .065$, $p < .05$). This suggests that the relationship between PEOU and Extent of Technology Usage is enhanced when STIES increases.

4.5.3 Further probe of the interaction effects

To further probe the interaction effects, all the significant moderation results were plotted and the significance of the slopes was evaluated. All plots were done at one standard deviation above and below the mean of the independent variable and moderator.

4.6 Simple slope tests

4.6.1 Perceived usefulness, strong ties, frequency of use

As shown in Figure 4.1 below, the plot confirms that the positive effect of PUSE on Frequency of Usage is stronger when Strong Ties is higher, as compared to when it is lower.

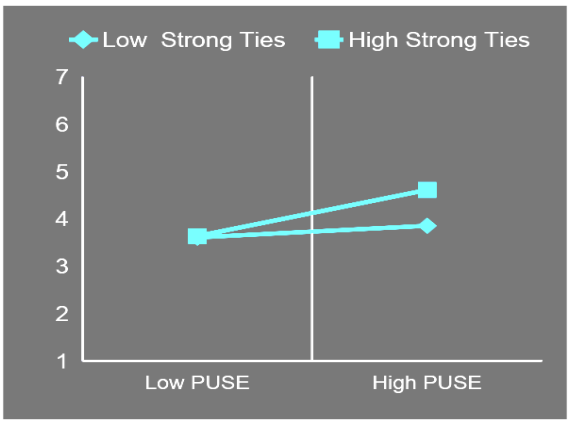

Figure 4.1: Perceived usefulness, strong ties, frequency of use

Source: Primary data (2021)

Table 4.12: Slope test for strong ties on perceived usefulness and frequency of use

	Gradient	T-value	P-value
Lower Level of Strong Ties	0.182	2.463	0.014
Higher Level of Strong Ties	0.720	4.237	0.000

Additionally, the simple slope analysis as presented in the table 4.12 indicated that the simple slope under the condition of High "Strong ties" significantly differs from zero at Simple slope 0.720, t = 4.237.

4.6.2 Perceived ease of use, weak ties, extent of use

The results from Figure 4.2 suggest that higher levels of PEOU may be negatively associated with Extent of Use, under conditions of High "Weak Ties".

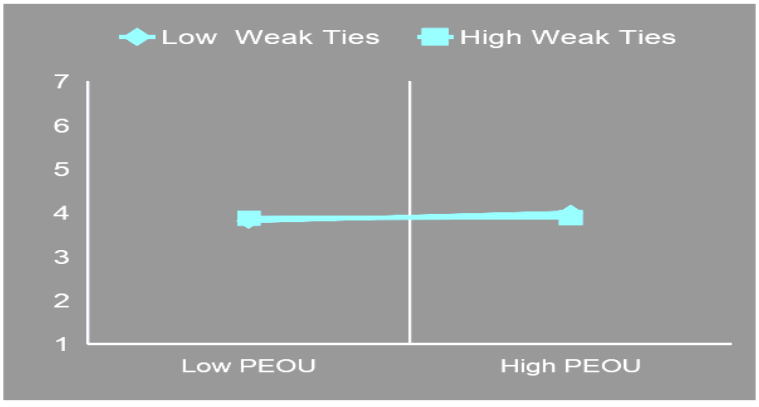

Figure 4.2: Perceived ease of use, weak ties, extent of use

Source: Primary data (2021)

Table 4.13: Slope test for weak ties on perceived ease of use and extent of usage

	Gradient	T-value	P-value
Lower Level of Weak Ties	0.263	2.689	0.007
Higher Level of Weak Ties	0.009	0.050	0.960

Table 4.13 reveal that PEOU positively relates to Extent of use under conditions of Low "Weak Ties" (slope = 0.263, t = 2.689), whereas there is no significant relationship under conditions of High "Weak Ties" (Slope = .0009, t = 0.050).

4.6.3 Perceived Ease of Use, Strong Ties, Extent of Use

The results from Figure 4.3 suggest that the relationship between PEOU and Extent of Technology Usage is more positive for conditions of High "Strong Ties" as compared to Conditions of Low "Strong Ties".

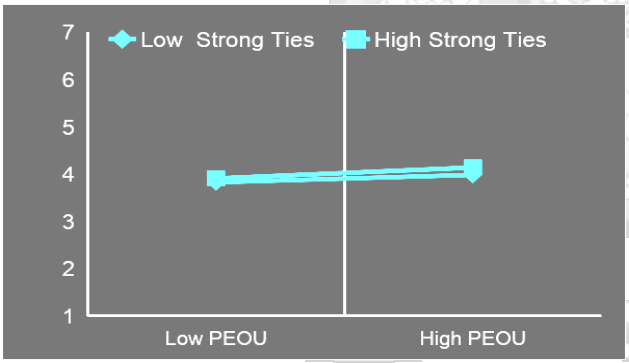

Figure 4.3: Perceived ease of use, strong ties, extent of use

Source: Primary data (2021)

Table 4.14: Slope test for strong ties on perceived ease of use and extent of usage

	Gradient	T-value	P-value
Lower Level of Strong Ties	0.136	3.041	0.014
Higher Level of Strong Ties	0.201	1.863	0.067

However, as shown in Table 4.14, the simple slope for the condition of High "Strong Ties" is not significant at 5% (slope = 0.201, t = 1.863). Instead, the slope under conditions of Low "Strong Ties" differs significantly from zero (slope = 0.136, t =

3.041).

4.7 Summary of findings

The results from the regression analysis indicate that both PUSE and PEOU are positively related to the frequency of technology usage among respondents. PUSE is also positively related to the extent of technology usage, but PEOU has no significant direct relationship with the extent of technology usage.

The interaction between PUSE and STIES is positively related to the frequency of technology usage. The plot of the interaction and the simple slope tests reveal that the positive effect of PUSE on Frequency of Usage is stronger at high levels of STIES, as compared to lower levels of STIES, and the slope at high levels of STIES is significantly different from zero. The interaction of PEOU and WTIES is negatively related to the extent of technology usage. The plot of the interaction and the test of simple slope reveal that PEOU positively relates to Extent of use under conditions of Low WTIES whereas there is no significant relationship under conditions of High WTIES.

The interaction of PEOU and STIES is positively related to the extent of technology usage. The examination of the interaction plot suggests that the relationship between PEOU and Extent of Technology Usage is more positive for conditions of High STIES as compared to Conditions of Low STIES. The slope for the condition of High STIES however did not achieve statistical significance.

4.8 Test of Hypotheses

4.8.1 Consumer attitudes and technology usage

In studying the relationship between consumer attitude and technology usage, this study sought to validate the existing literature by testing TAM's relevance in an emerging market context. The first objective of the study was therefore to determine the effect of consumer attitude towards technology and technology usage. Consumer attitude as an independent variable was measured using TAMs constructs: Perceived Usefulness (PU) and Perceived Ease of Use, (PEOU). Using a 7 point Likert scale, respondents were asked to rate the extent to which PU and PEOU influenced their attitude towards technology and technology usage. Consumer technology usage was operationalised as extent of usage and frequency of usage.

To determine the relationship, the study hypothesized in H1 that favourable perceived usefulness of a technology was positively associated with the extent and frequency of consumer technology usage. Findings from the study as indicated in Table 4.11. indicated that perceived usefulness of a technology was positively related to both frequency of technology use ($\beta = .288$, $p < .05$) and extent of technology use ($\beta = .558$, $p < .01$), providing support for H1.

The study hypothesised in H2 that favourable PEOU of a technology was positively related to extent and frequency of consumer technology usage. The study found that PEOU was positively related to the frequency of technology use ($\beta = .339$, $p < .05$), and was also positively related to extent of use of a technology ($\beta = .135$, $p > .05$), which supported H2.

4.8.2 Perceived usefulness and consumer technology usage

The study results showed that consumer attitudes, measured by both PU and PEOU were positively related to the extent and frequency of consumer technology usage. However, PU was a stronger predictor of consumer technology usage compared to PEOU. These findings support extant literature that demonstrated TAM's predictive

power as first theorised and empirically supported by Davis (1989). Camilleri and Falzon (2020) found PU to be a stronger predictor of using mobile streaming among university students while PEOU did not have direct relationship with usage.

Similarly Sandstrom and Dunn (2014) argued that PU had a significant direct effect on video usage among students in Hungary while PEOU had only an indirect effect through PU. Earlier studies had also empirically demonstrated the power of PU on influencing consumer technology usage; for example, Lee and Cho (2011) examined the factors that determine social media usage in mobile broadband. They found that perceived usefulness was significant in Facebook usage. Igbaria et al. (1997) argued that PU directly impacted system usage. Similarly, Pikkarainen et al. (2004) found PU to be a main factor influencing online banking acceptance. A study of the integrated adoption model of mobile cloud services found that PU was significantly related to the consumers perceptions towards usage of mobile cloud services (Park & Kim, 2014).

4.8.3 Perceived ease of use and consumer technology usage

PEOU was positively related to extent of consumer technology usage but the relationship was not statistically significant. Furthermore, the relationship between PEOU and frequency of consumer technology usage was negative. Findings on the influence of PEOU on consumer technology usage had mixed empirical findings: while some studies have argued that PEOU is not a strong direct determinant of consumer technology usage (Camilleri & Falzon, 2020), other studies have found PEOU to have significant impact within different boundary conditions(Adams et al., 1992; Windasari et al., 2022).

The findings of this study are in line with other scholars such as Davis (1989) who concluded that PEOU was more significant as an antecedent of PU as opposed to a direct relationship. A study by Camilleri and Falzon (2020) on the motivations to use online streaming services found that while PEOU was not directly related to consumer technology usage, there was an indirect effect through PU. Similarly, a study predicting telecare adoption on senior citizens argued that the relationship between PEOU and

usage of telecare was not significant (Kamal et al., 2020). Adams et al. (1992) argued that PEOU was a significant direct determinant of consumer technology usage within some boundary conditions. Similarly, another study on the use of online travel contended that PEOU was the strongest determinant for female and older travellers' usage, but it was non-significant for male and younger travellers who had a level of experience in using online technology since they were experienced in navigating such technologies (Assaker, 2020).

Other scholars have argued that PEOU has a direct and significant relationship with consumer technology usage. Windasari (2022) opined that PEOU motivated generation Y and generation Z to use digital banking. Lee and Choo (2011) examined the factors that determined social media usage in mobile broadband and concluded that PEOU was an influential factor in Twitter usage. Similarly, Wirtz and Göttel (2016) concluded that PEOU was of greater importance in social media acceptance than PU. From the foregoing findings, it is evident that PEOU, although an important construct in explaining consumer technology usage, has its strength lying in indirect influence through PU or when moderated by other factors such as age, efficacy in technology usage, gender and technology readiness, among other factors.

In conclusion, when consumers perceive a technology as useful, their attitude towards the technology strengthens and this translates to increased usage. It is therefore instructive that firms design their technology products with demonstrated relevance to the consumers in terms of usefulness in making their lives easier. This, followed by ease of use, increases consumers' propensity to use technology. Equally, marketing managers should create marketing strategies that demonstrate the benefits of using the technology in order to influence consumers to use the technology.

4.8.4 Social networks and technology usage

The second objective was to establish the effect of social networks on consumer technology usage. In this relationship, two hypotheses were stated: H3 stated that strong social network ties positively influenced the extent and frequency of consumer

technology usage. H4 stated that weak social network ties positively influenced the extent and frequency of consumer technology usage. Social network ties was operationalised using strong network ties and weak network ties. Using a 7 point Likert scale, respondents were asked to rate the extent to which their strong network ties and weak network ties influenced the extent of their technology usage.

The relationship between extent of use and strong ties was positive and significant ($r= 0.156$, $p <0.05$). This means that an increase in levels of strong ties between consumers using mobile banking resulted to an increase in the extent of usage of mobile banking. The relationship between frequency of use and strong ties was positive and significant ($r= 0.163$, $p <0.05$) even though it was a weak relation. The study revealed that strong ties had a positive and significant influence on extent of usage of mobile banking ($\beta= 0.133$, $p<0.05$). A unit increase in levels of strong ties among individuals in a strong ties social network would lead to an increase in extent of usage of mobile banking by 0.133 units holding other factors constant. The study showed that strong ties had a positive and significant influence on frequency of usage of mobile banking $\beta= 0.122$, $p<0.05$). A unit increase in levels of strong ties among individuals would lead to an increase in frequency of usage of mobile banking by 0.122 units holding other factors constant.

The correlation coefficient between extent of usage and weak ties was not significant ($r= 0.08$, $p > 0.05$). A similar finding was observed between frequency of usage and both strong and weak ties. The study found that weak ties negatively affected extent of usage of mobile banking ($\beta= -0.023$, $p<0.05$) as well as frequency of usage ($\beta= -0.033$, $p<0.05$).

The above findings align with extant literature that opine that social interactions within social networks influence technology-related attitudes and psychological processes more compared to objective and independent assessments of technical characteristics (Katz et al., 2004; Lee et al., 2003; Magni et al., 2012). Strong ties provide frequent and long lasting relations that are more conductive to support knowledge creation since

they include trust, reciprocity and willingness to share the resources. Strong ties bring forth social capital that accrues from the strong intimate and dependable relationships (Cengiz, 2006).

Similar arguments hold that strong ties have more significant impact on consumers' adoption intentions of new service than weak ties (Yang et al., 2016). Further, Taylor et al. (2011) argued that when consumers are confronted with uncertainty over a technology, they often turn to their social networks as information and normative referents. Gong et al. (2015) studied the effect of tie strength on second generation mobile instant chat messaging and found that strong ties had a significant impact on consumer usage. Gong et al. (2018) argued that 'strong ties' was an important feature in retaining users in WeChat groups. Another study concluded that after a service failure, the likelihood of consumers complaining to the firm was less likely when ties were strong (Mittal et al., 2008).

While weak ties have been found to influence technology usage, this study established that weak ties did not influence the extent and usage of mobile banking. In a context of mobile banking, it was not surprising to find that weak ties did not influence consumers' technology usage. Banking is a service based on trust due to its highly personalized nature (Farah et al. 2018).

A similar argument was advanced by Singh et al. (2010) that individual decisions to adopt mobile commerce services was influenced by friends and close family members. Another study on mobile banking in Pakistan concluded that a consumer was likely to adopt technology if it was suggested by an opinion leader in their inner circle (Farah et al., 2018), while Alalwan et al. (2015) argued that trust is an important factor in self-service technologies because there is lack of personal interaction when using self-service technologies. The findings of this study are similar to those of the study by Mitttal et al. (2008) which concluded that in a service failure, consumers in a weak tie relationship with the service provider were more likely to complain than consumers in strong tie relationship affirming; this is because when people in strong tie network trust

one another, they are likely to believe in a service and believe that even when it has a problem, the problem will be resolved.

However, there were situations where weak social ties influenced consumer technology usage. In a study of financial inclusion in sub-Saharan Africa, weak ties as well as strong ties were found to influence financial access (Okello et al., 2018). Weak ties were also found to facilitate creativity and access to novel information compared to strong ties (Perry-Smith, 2014). Students have found weak ties useful in receipt of useful knowledge and job attainment and well-being (Sandstrom & Dunn, 2014). These findings suggest that the influence of weak ties on consumer technology usage is determined by how sensitive the service is and the extent to which consumers feel safe to seek opinion from people outside their strong tie networks and not those on their weak tie networks. In financial services sector, consumers are sensitive to share information with people who are not close to them, therefore weak social network ties had a negative relationship with consumers propensity to use mobile banking. Financial institutions need to scale up consumer education to ensure the right information circulates among strong social network ties, in order to ensure that consumers' attitudes are influenced towards the technology by using the right information.

4.8.4.1 Moderating effect of strong network ties on the relationship between consumer attitude and consumer technology usages

Scholars have argued that social interactions influence technology-related attitudes and psychological processes more compared to objective and independent assessments of technical characteristics (Katz et al., 2004; Lee et al., 2003). The study measured the moderating effect of social network ties on the relationship between consumer attitude and social network ties.

4.8.4.2 Strong network ties on consumer attitude and consumer technology usage

The study hypothesised in H5 that the effect of perceived usefulness on technology usage is strengthened when strong social network ties increase in magnitude. Findings from the study indicated that when levels of strong network ties increased in

magnitude, the relationships became stronger between perceived usefulness and both extent of usage ($\beta = .065$, $p < .05$) and frequency of usage ($\beta = .04$, $p > .05$). However the positive relationship with frequency of usage was not significant.

At the same time, the study hypothesised in H6 that the relationship between perceived ease of use of a technology and consumer technology usage was strengthened when levels of strong social network ties increased in magnitude. Findings from the study indicated that at high level of strong network ties the relationship between Perceived Ease of Use and both frequency of usage and extent of usage were strengthened ($\beta = .028$, $p > .05$). the findings supported H6.

The study findings were similar to other prior studies on the influence of strong network ties on the relationship between consumer attitude and technology usage. Wong et al., (2020) found that tie strength significantly influenced social media marketing adoption among university students. Tie strength was also found to play an intermediary role between interactivity and customer engagement behaviour in a study of livestreaming commerce (Kang et al., 2021). Strong ties was found to have an important impact on the continued usage of second generation instant messaging (SMIM) such as WeChat (Gong et al., 2015), while Zhang et al. (2017) opined that strong ties was an important feature in WeChat in retaining users on online social networks. Additionally, scholars have argued that strong ties strengthen emotional support as a result of increased communication (Coleman, 1988, Granovetter, 1973) because actors in a strong ties network trust one another more (Marin, 2004).

In this study, the findings indicate that the closer the people are, the greater the trust they have among themselves, and they use this trust as the basis for influencing one another on highly sensitive decisions such as using mobile banking. Banking is a service that is based on trust, and the use of a new channel such as the mobile phone to perform banking transactions requires consumers to make careful considerations; hence the reliance on people they trust for their opinion in making the decision. Tie strength has been described as feature of social capital in sociological studies (Kim et al. 2010),

and plays an important role in maintaining strong and affective relationships which in turn create a conducive environment for free exchange of information which influences decision making (Woisetschläger et al., 2011).

The findings indicate that strong ties have a significant influence on the relationship between perceived ease of use and the extent and frequency of usage. The relationship between perceived ease of use and consumer technology usage indicates that while perceived ease of use may not have a strong direct effect on consumer technology usage, it is likely to be a strong influence indirectly through perceived usefulness.

Other scholars who measured the influence of strong ties on consumer attitude without disaggregating the construct of consumer attitude also found that strong ties had a positive impact on consumer attitude towards technology and technology usage. Word of Mouth (WoM) has been found to have a positive influence on consumer attitude towards retail shoppers' loyalty (Yoon & Park, 2018). The foregoing authors argued that people in strong network ties exchange valuable resources including information shared among the social actors and this influences positive WoM regarding prior shopping experience which in turn promotes retail shoppers loyalty.

Similarly, Zhao et al. (2012) opined that strong ties acted as complete mediators between interactivity among the actors and customer engagement behaviour such that when relationships in social network changed from weak to strong, customers' willingness to give a "thumbs up" or send e-WOM and product referral gradually became stronger. The findings indicate the need for firms to understand the dynamics of social interactions in strong social networks and invest in building linkages with such networks in order to create brand promoters who would share information within the network which would strengthen the consumers' propensity to use their technology products.

4.8.4.3 Weak social network ties, consumer attitude and consumer technology usage

The study hypothesised in H7 that the relationship between perceived usefulness of a

technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude. Findings from the study indicate that at high levels of weak social network ties, the relationship between perceived usefulness and both frequency ($\beta = -.055$, $p > .05$), and extent of usage ($\beta = -.062$, $p < .05$) become weak although not statistically significant. The findings therefore did not support H8.

Further, the study hypothesised in H8 that the relationship between perceived ease of use of a technology and consumer technology usage was strengthened when levels of weak social network ties increase in magnitude. Findings from the study indicated that when levels of weak ties increase in magnitude, the relationship between perceived ease of use and both frequency of usage ($\beta = -.085$, $p < .10$) and extent of usage become negative although not significant. The findings therefore did not support H8.

Gong et al. (2018) argued that in circumstances such as the use of social apps like WeChat, trust played an essential role in consumer usage behaviour. Furthermore, trust is a key characteristic of strong ties as opposed to weak ties. Users of technology based services such as social apps rely on the trust generated from their strong ties as their basis of reducing perceived risks and uncertainties in the use of the service. The foregoing argument concludes that the weaker the social tie, the more likely the negative influence on consumer usage behaviour. Similarly, Mittal et. al. (2008) investigated the impact of social network tie strength on consumers' likelihood to complain following a service failure and concluded that when ties are weak, complaints were more likely to be higher than when the ties were strong.

Empirical evidence shows that the stage of technology adoption and usage can sometimes determine whether consumers rely on their strong ties or weak ties to inform their behaviour. In a study of farmers' adoption of fertiliser and new seeds as a newer way of improving on their agricultural practices, the study findings revealed that the initial influence of extension officers (weak ties) was high in the beginning but the effect wore off after some time, and farmers began relying more on their neighbours (Krishnan & Patnam, 2014). Okello et al. (2018) tested the moderating effect of social

network interactions on the relationship between mobile money usage and financial inclusion in rural Uganda and established that existence of both strong and weak social ties among mobile money users promoted financial inclusion.

Granovetter (1985) theorised that weak tie networks were strategic in giving actors an opportunity to access novel information, ideas and opportunities from other networks which they would not get from their strong tie networks. This argument was supported by Wong et al. (2020) who opined that weak ties served as bridges between communities of dissimilar interests by functioning as a transmitter of information (De Meo et al., 2014). The argument therefore supposes that weak social network ties act as indirect influences of consumers' attitude on technology and consumer technology usage by providing novel information to strong network ties which in turn have a direct influence on consumer attitude on technology and consumer technology usage.

Scholars have argued that the type of technology may determine if weak ties play a role in influencing consumer attitude towards behaviour: for instance, consumers' attitude towards education was found to be influenced by weak social network ties. In these situations, as argued by Sandstrom and Dunn (2014), consumers were found to consider weak ties as useful in the receipt of useful knowledge in areas such as job attainment and education (Steffes and Burgee, 2009)

Similarly, Komito (2011), Lee and Katz (2015), and Piotrowski (2006) found that both strong and weak ties influenced the decision-making process of migrants on key issues such as remittances back home, creation of strong sense of community among migrants living away from home, and adoption of modern technology to enable staying in touch while living abroad. On the contrary, our study of mobile banking involved consumers who already had experience in using the service and therefore it would appear that they were keener on the trust from close friends in making their decisions than from weak social network ties.

Table 4.15 summaries the results of the hypotheses by showing the study objectives,

the study hypotheses and test results, the interpretation and a conclusion showing the hypotheses that were supported and those that were not supported.

Table 4.15: Summary of hypotheses testing

Objectives	**Hypotheses**	**DV**	**R^2**	**p-value**	**F-Statistic**	**Interpretation**	**Conclusion**
Determine the effect of consumer attitudes on technology and consumer technology usage	H1: favourable perceived usefulness of a technology is positively associated with the ntextent and frequency of consumer technology usage	Frequency of Usage	0.255	p < .05	4.44	A unit increase in perceived usefulness would lead to increase in frequency of usage of mobile banking by 0.288 units holding other factors constant (β = .288, p < .05).	PUSE is positively related to the frequency of technology **H1 supported**
		Extent of Usage	0.233	p < .01	4.63	A unit increase in perceived usefulness would lead to increase in extent of usage of mobile banking by 0.588 units holding other factors constant (β = .558, p < .01).	PUSE is positively related to the extent of technology usage **H1 supported**
	H2: favourable perceived ease of use of a technology is positively associated with the extent and frequency of consumer technology usage	Frequency of Usage	0.255	p < .001	4.44	A unit increase in perceived ease of use would lead to increase in frequency of usage of mobile banking by 0.339 units holding other factors constant (β = .399, p < .001).	PEOU positively related to the frequency of technology **H2 supported**
		Extent of Usage	0.233	p> .05	4.63	Perceived ease of use is positively related to the extent of technology usage (β = .135, p> .05)	

2. Establish the effect of social networks on consumer technology usage	H3: Strong social network ties positively influence the extent and frequency of consumer technology usage	Frequency of Usage	0.255	p < .05	4.49	A unit increase in strong ties would lead to increase in frequency of usage of mobile banking by 0.122 units holding other factors constant. (β = .122, p < .05).	Strong social network ties positively influence frequency of consumer technology usage **H3 supported**
		Extent of Usage	0.251	p < .05	4.39	A unit increase in strong ties would lead to increase in extent of usage of mobile banking by 0.133 units holding other factors constant. (β = .133, p < .05).	Strong social network ties positively influence Extent of consumer technology usage **H3 supported**
	H4: Weak social network ties positively influence the extent and frequency of consumer technology usage	Frequency of Usage	0.255	p> .05	4.49	Weak ties is negatively related to the frequency of technology usage (β = -.032, p> .05)	Not Significant **H4 Not supported**
		Extent of Usage	0.251	p> .05	4.39	Weak ties is positively related to the extent of technology usage (β = -.023, p> .05)	Not Significant **H4 Not supported**
3. Establish the moderating effect of social networks on the relationship between consumer attitudes on technology and consumer technology usage	H5 : The relationship between perceived usefulness of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude	Frequency of Usage	0.255	p> .05)	4.49	The coefficient of the product term of PUSE and STIES is positively related to the frequency of use (β = .04, p> .05)	Not Significant **H5 supported**
		Extent of Usage	0.251	p < .05	4.39	Relationship between PUSE and Extent of Use is strengthened at high levels of Strong Ties. (β = .065, p < .05).	perceived usefulness of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude **H5 supported**

	H 6: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of strong social network ties increase in magnitude	Frequency of Usage	0.255	p < .05	4.49	Relationship between PEOU and Frequency of Use is strengthened at high levels of Strong Ties. (β = .138, p < .05)	The interaction between PEOU and STIES is positively related to the frequency of technology usage **H6 supported**
		Extent of Usage	0.251	p > .05	4.39	PEOU and STIES is positively related to the extent of use (β = .028, p > .05)	Not Significant **H6 Supported**
	H7 : The relationship between perceived usefulness of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude	Frequency of Usage	0.255	p> .05	4.49	PUSE and WSTIES is negatively related to the frequency of use (β = -.055, p> .05)	Not Significant **H7 Not supported**
		Extent of Usage	0.251	p < .05	4.39	At higher levels of Weak Ties, the relationship between PUSE and Extent of Technology Usage is reduced, (β = -.062, p < .05).	interaction of PUSE and WTIES is negatively related to extent of technology use **H7 Not supported**
	H8: The relationship between perceived ease of use of a technology and consumer technology usage is strengthened when levels of weak social network ties increase in magnitude	Frequency of Usage	0.255	p < .10	4.49	At higher levels of Weak Ties, the relationship between PEOU and Frequency of Technology Usage is reduced. (β =-.085, p < .10)	Interaction of PEOU and WTIES is negatively related to extent of technology use **H8 Not supported**
		Extent of Usage	0.251	p > .05	4.39	PEOU and WTIES is negatively related to the extent of use (β = -0.046, p > .05)	Not Significant **H8 Not supported**

4.9 Conclusion

This chapter focussed on data analysis. The respondents' response rate and descriptive statistics were presented using frequency tables, mean scores, mode and standard deviations. This was followed by inferential statistics which were presented using correlation and regression analysis. The regression analyses were used to test the hypothesis. The chapter concluded with a summary table showing the test of the hypotheses.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary, conclusions and recommendations from the study. Further, it discusses the contributions of the study in terms of theoretical, policy as well as managerial practice. The chapter ends by pointing out limitations of the study and proposes possible areas of future research.

5.2 Summary

The purpose of this study was to determine the relationship between social networks, consumer attitudes and consumer technology usage. The study extended scholarly knowledge on the determinants of consumer technology usage by cross-fertilising the literature on consumer attitude and technology usage by drawing insights from social network and social exchange theories to explain how the consumer attitude - technology usage relationship is moderated by degree of consumer interaction in social networks. In advancing knowledge on the baseline effect of consumer attitude towards technology and technology usage, the study proposed that the relationship between consumer attitude towards technology and consumer technology usage is strengthened when levels of strong and weak social network ties increase in magnitude.

To test this proposition, the study used primary data from a population of mobile banking users in Kenya, an emerging economy that is known for high degree of mobile technology usage. The sampling frame was the National Evaluation Sampling Programme (NASSEP V) hosted by the Kenya National Bureau of Statistics. A total of 1,739 residents in 1,140 households located in the Kajiado, Kiambu, Machakos, and Nairobi Counties were sampled for the study. The study established that only 1,475 residents were over 18 years of age out of which only 452 respondents had subscribed to mobile banking, representing 29% of the total sample. Computer aided personal interview process was used to administer the data collection instrument. The measures of the study's constructs (i.e. consumer attitude towards technology, strong social

network ties, weak social network ties, and technology usage) were validated using confirmatory factor analysis, whilst the study's conceptual model was estimated using moderated regression analysis.

Findings from the study indicated that favourable consumer attitudes towards technology were associated with greater consumer technology usage. Both perceived usefulness and perceived ease of use were found to be significant predictors of consumer attitude towards consumer technology usage. Perceived usefulness was however found to be a stronger predictor of consumer attitude compared to perceived usefulness.

Additionally, higher levels of strong social network ties were associated with greater consumer technology usage, while weak social network ties were negatively associated with consumer technology usage. Furthermore, the study found out that increases in levels of strong social network ties was associated with a stronger positive relationship between consumer attitude towards mobile banking and mobile banking usage. Increases in levels of weak social network ties were associated with a negative relationship between consumer attitude towards mobile banking and mobile banking technology usage. The findings suggest that consumers trust their strong social networks to discuss and share information on issues of banking, and they do not engage with their weak ties on the same.

5.3 Conclusion

This study was based on technology acceptance theory, social network and social exchange theories. The study aimed at establishing the relationship between consumer attitudes, social networks and consumer technology usage. Two direct relationships between consumer attitude on technology and consumer technology usage, and social networks and consumer technology usage were tested. A third relationship involved testing the moderating role of social networks on the relationship between consumer attitude on technology and consumer technology usage.

A total of seven hypotheses were tested and the next paragraphs summarize the results. On the first relationship between consumer attitude on technology and consumer technology usage, two hypotheses were tested. H1 tested he relationship between perceived usefulness and extent and frequency of consumer technology usage. A positive and statistically significant relationship was reported, thus supporting the hypotheses. H2 tested the relationship between perceived usefulness and extent and frequency of consumer technology usage and proved that it was positive: the hypothesis was therefore supported.

The social networks and consumer technology use, H3 tested the relationship strong social network ties and the extent and frequency of consumer technology usage. Findings revealed that strong social network ties positively influenced both the extent and frequency of consumer technology usage. The hypotheses were carried. H4 tested the relationship between weak social network ties and the extent and frequency of consumer technology usage. The results indicated that weak social network ties had no significant influence on both the frequency and extent of consumer technology usage. The hypotheses were therefore not supported.

The moderating effect of social networks on the relationship between consumer attitude on technology and consumer technology usage was tested. H5 tested the moderating effect of strong social network ties on the relationship between perceived usefulness and extent and frequency of consumer technology usage. Perceived usefulness of a technology and consumer technology usage was strengthened when levels of strong social network ties increased in magnitude, hence the hypothesis was supported. H6 tested the moderating role of strong social network ties on the relationship between perceived ease of use of a technology and the extent and frequency of consumer technology usage. There was no significant effect of the frequency of consumer technology usage therefore the hypothesis was rejected.

Finally, H7 tested the moderating effect of weak social network ties on the relationship between perceived ease of use and the extent and frequency of consumer technology

was tested. H8 tested the moderating role of weak social network ties on the relationship between consumer attitude on technology and the extent and frequency of consumer technology usage. The findings showed that both relationships were not significant and therefore the hypotheses were rejected.

Hypotheses on the relationship between consumer attitude towards technology and consumer technology usage were supported, while the hypotheses on the influence of social network ties on consumer technology usage were partially supported as follows: Strong network ties were found to have a significant influence on consumer technology usage while weak network ties were found to have a negative influence on consumer technology usage. Hypotheses on the moderating effect of strong social network ties on consumer attitudes on technology and consumer technology usage were supported. In contrast, the hypotheses on the moderating influence of weak social network ties on the relationship between consumer attitudes on technology and consumer technology usage were not supported. The study found that at higher levels of weak social network ties, the relationship between consumer attitude on technology and consumer technology usage became negative.

The study contextualised technology usage with mobile banking usage. The findings indicate that mobile banking, which is a relatively new technology platform that consumers have started using to access banking services conveniently at any time anywhere, is a trust-based service, and consumers only trust discussions and opinions shared with their strong networks. The findings suggest that consumers are not comfortable discussing their financial matters with people who are not close to them. The findings also suggest that consumers feel confident to validate their opinions about mobile banking with their close friends and this enhances their attitude towards mobile banking and increases usage.

The findings imply that consumers' individual attitudes towards mobile banking are influenced by the opinions of their close friends through exchange of information within their strong social networks. The role of social interactions within social

networks in shaping consumers' attitudes and consumer behaviour is therefore proved to be applicable in consumer technology usage.

5.4 Implications of the study

The study contributes to the knowledge on how and under what social networking conditions consumer attitudes towards technology are related to consumer technology usage, using mobile banking usage in an emerging market as the context.

5.4.1 Theoretical implications

The findings supported extant literature that demonstrated that TAM is one of the most acceptable theories of explaining determinants of consumers' attitude towards technology and consumer technology usage (Amoroso & Hunsinger, 2009). Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), the key constructs of TAM were found to be significant drivers of acceptance and usage of technology by consumers in line with the theoretical assumptions. By testing the predicting power in consumer technology usage in an emerging market context, this study further supported the versatility and parsimony of TAM in its usage in a variety of contexts (Ahmad, 2018) and further aligned with literature that argued that PU was a stronger predictor of consumer usage of technology than PEOU.

Similar to existing literature that sought to improve TAM's predictive power by extending it with additional constructs or integrating it with other theories, this study integrated social network theory and social exchange theory to determine the moderating effect of social networks on the relationship between consumer attitudes and consumer technology usage. Using strong social network ties and weak social network ties to test their moderating effect, the study proved that social interactions within social networks influence individuals' attitudes towards technology and technology usage. The study demonstrated that consumers prefer to exchange information and to rely on their strong networks ties whom they trust because they are bound together by intimacy, frequency of engagement and common norms. This is because banking is a trust-based service.

The study showed that consumers were uncomfortable engaging with their weak network ties in sharing information and seeking their views about mobile banking services. By integrating TAM with social network theories, the study advanced the existing literature by showing that consumer interactions within social networks were important in explaining when consumer attitude towards technology was associated with consumer technology usage. In addition, the study extended the existing literature by using primary data from Kenya, an emerging economy setting that is known for its mobile technology innovations. This study context enriches and broadens empirical evidence from an under-researched context and helps to broaden scholarly perspective on determinants of consumer technology usage.

5.4.2 Implications for technology marketing theory development

Findings from the study have several important implications for technology marketing theory development. First, consumers' decisions to use technology especially in a voluntary setting are more influenced by how useful the technology is to their daily lives than how easy it is to use. The results suggest that if a system is useful in meeting their needs, the consumers are willing to learn how to use it and therefore PEOU is not of direct importance compared to usefulness. However, other scholars such as Lee et al. (2003) argued that while PEOU may appear like an unstable predictor of technology usage, it acts as an antecedent of PU rather than a direct parallel, hence it can influence technology usage indirectly through PU.

There are scholars who hold the view that the strength of PU and PEOU depend on whether the technology is used in a mandatory or voluntary setting (Adams et al., 1992; Wu & Lederer, 2009). As this study focused on voluntary setting, consumers had a choice of the technology they would prefer to use to perform their banking transactions. Marketing theory can benefit from the insights of this study by taking into account the nature of the technology and the environment that the technology is introduced to determine the most important constructs to use in explaining consumer technology usage.

This study was carried out in a voluntary setting and affirms that consumers' attitude towards technology usage in voluntary settings is influenced more strongly by PU and less by PEOU. The findings align with the argument of Davis (1993) in his advancement of TAM theory that usefulness was far more important than ease of use in predicting usage. However, it is important for industry practitioners to bear in mind that while consumers may be more influenced by usefulness of a technology in determining their level of usage, PEOU still influences PU and therefore PEOU needs to be considered as important predictor of consumer technology usage indirectly through PU.

The study used Social Exchange Theory and operationalized the variables using Granoveter's (1977) strong social network ties and weak social network ties, to assess their influence on consumers' attitudes towards technology and technology usage. Findings indicate that the interaction between PU and strong ties is positively related to the extent of technology usage. While the influence on frequency of technology usage is also positive, it is not significant. According to Granoveter (1973), people model their behaviour on key influencers in their circles who share similar values. Cai et al. (2015) similarly argued that people can acquire knowledge about financial products from their friends, be influenced by their friends 'choices' and/or learn from their friends' experiences with the product.

In a complex and very personal and trust-based issue such as financial access decisions, most consumers prefer to rely on the trust and confidence of their strong ties in making such decisions. This study realised that while the influence of strong ties on the relationship between perceived usefulness and extent of technology usage was strong and significant, the influence on frequency of usage was positive but not significant. This finding suggests that when a consumer builds confidence about the usefulness of a technology from the people close to them, they become comfortable to use it to the extent of their financial needs.

The moderating effect of strong ties has demonstrated an impact on consumer attitude

towards technology and consumer technology usage. The findings suggest that when a consumer develops confidence in a technology because a similar attitude is held by members of their strong tie networks, their attitude towards the technology is positively influenced therefore giving them confidence to use the technology as often as they require to do it while weak social network ties had no influence. The findings are very insightful in that due to the sensitivity of banking among consumers, they are not likely to be influenced by people who are not strongly linked to them since banking is a business of strong trust. These findings provide insights for scholars of marketing theory to further explore other factors such as the nature of technology, or the environment that could impact the influence of weak ties on consumer attitude towards technology and technology usage.

5.4.3 Policy implications

The study's findings provide valuable insights for regulators of technology services in their efforts to accelerate consumer education, migrate consumers to technology enabled self-service, as well as development of policies to boost technology usage and improve efficiency and convenience for consumers.

The evidence that strong social network ties have a positive and significant influence on consumer attitudes means that regulators should consider policies on information sharing/disclosure in social networks to ensure consumers are not misled. To mitigate this challenge, policy makers could enforce firms to create consumer education materials and avail them freely to inform and shape information exchange within social networks.

Firms could also develop policies on research and development. These policies would outline how product development process take into account interactions within social networks and how to ensure information is freely availed to mitigate against sharing of the wrong information.

Organisational culture can also be influenced by this study by ensuring that firms think from the outside inwards in providing technology services to consumers. Many organisations plan from the firm outwards to the customer, and this culture can create a disconnect in meeting the needs of the consumers. A policy that aligns entire firms to respond to the needs of the consumers will ensure that their products reflect the needs of the consumers and for the social networks that play a role in influencing consumer attitude and towards technology and usage. This approach would ensure that besides research and development function, other functions such as finance, procurement, Human Resource, customer service, among others become proactive in embedding the customer needs in the way they conduct business.

Firms that design technology services without researching the needs of the customers are likely to experience low uptake if such consumers perceive that the product is not useful and easy to use and especially when such attitudes are reinforced through social interactions.

The study demonstrates the importance of social networks in moderating consumer attitudes towards technology and technology usage. To ensure that the right information is flowing through social networks, social media policies will need to be enhanced to safeguard actors in social networks from circulating information that is not factual.

Consumer protection policies against unverified information or inadequate information by firms will help consumer to base their decisions on the right information from the right sources.

5.4.4 Managerial practice implications

The study findings provide insights for technology marketing managers in their research, development and marketing of technology-led products. Traditionally, technology marketing managers devoted their investments to studying the needs of different target market segments by profiling their individual characteristics, and using media to target

individual consumers' decision making process. They also use traditional marketing theories to inform their approach to marketing technology products. This study demonstrates that there is a need for technology marketing managers to integrate marketing theories, information system theories and social network theories to enhance their marketing approaches informed by consumer attitudes, social networks and consumer technology usage. Such an integrated approach will break new ground for more effective technology marketing strategies with the benefit of driving a higher consumer technology usage, which has become a key success indicator for firms.

Furthermore, technology marketing managers will find value in expanding their marketing approaches to include social networks as captive audience segments to target. This will require a clear understanding of social network structures, dynamics, interactions and characteristics such as strong social network ties and weak social network ties in order to prioritise them as key target audiences in reaching, influencing, retaining and growing their customer base. At the same time, firms will need to appreciate the role of social network ties as sources of key insights in their research and development of new technology products. Firms will also need to take into consideration other moderating factors such as the nature of the technology, the level of voluntariness of the environment, and other factors such as demographic factors and their role as boundary conditions in influencing the level of consumer technology usage.

Other management functions that would find these findings insightful include customer experience managers. By appreciating the important of social networks in influencing consumer attitudes, customer experience managers will need to focus more on social networks as a target audience to share information proactively in order to shape the information that flows freely in social networks and influences consumer attitudes.

Research and development practitioners in firms will also need to target social networks as important study populations in order to understand the dynamics of different social networks. Such information would help the product development teams in the design

and development of technology products that are responsive to consumer attitudes and expectations.

5.5 Study limitations and areas for future research

This study used cross-sectional research design which is useful in uncovering interrelations between the study's key constructs. Future studies could focus on longitudinal research to explore and explain the social network dynamics and factors that affect their evolution and influence on consumers' attitudes. For instance, some studies found that some members of social networks relied on their network ties at different stages of their understanding and usage of technology. The single industry context enabled this study to go deep into explaining the study concepts. To take this important study further, future studies could focus on multiple industries and compare the findings.

Future studies could also focus on other moderators that influence the relationship between consumer attitudes on technology and technology usage in an emerging market context. Such moderators could include consumer demographics, buying contexts and level of technological awareness by consumers. Other contexts of study could include formal compared to informal consumption contexts, technological infrastructural development contexts as well as the wider socio-cultural context. Other future research could focus on grounded theory to study social networks and consumer technology usage with a view to building a new theory and measurement scales to explain the role of social networks in influencing consumer technology usage. This study found an existing theoretical gap which has led to fragmented research findings due to usage of varying theories and varying measurement scales. Future studies could purpose to address this gap.

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APPENDICES

APPENDIX A: LETTER OF INTRODUCTION

Cla Sangale Rd, Madaraka Estate
P. O Box 59857 - 00200, Nairobi, Kenya.
Cell: +254 703 034 414/5/7, Twitter: @SBSKenya
Facebook/LinkedIn: Strathmore Business School

Email: info@sbs.ac.ke or visit www.sbs.strathmore.edu

Strathmore UNIVERSITY BUSINESS SCHOOL

21st August 2020

Ref: SBS/ PhDBM102299 /17

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: LETTER OF INTRODUCTION – KIBURU, LYDIAH

Greetings from Strathmore Business School (SBS).

This letter serves to confirm that the above named is a student pursuing a PhD programme in Business and Management at Strathmore University Business School, Madaraka Campus.

She is working on her research thesis titled '*Consumer Attitudes, Social Network and Technology usage; Evidence from mobile banking consumers in Kenya*' as partial fulfilment of the requirements for the programme. In view of this, she will contact you to request your assistance in data collection.

All data and information collected will be treated with utmost confidentiality and only used for academic purposes.

Any assistance accorded to her will be highly appreciated. Do not hesitate to contact me on sbsdoc@strathmore.edu should you need further clarification.

Yours Sincerely,

For

Lena Gachoki-Njihia

Head, Graduate Programmes

APPENDIX B: KNBS RESPONSE

KENYA NATIONAL BUREAU OF STATISTICS

KNBS
KENYA NATIONAL BUREAU OF STATISTICS
Keeping you informed

P.O. BOX 30266
00100 Nairobi GPO, Kenya
Telephone: Nairobi 3317586/8, 3317612
3317622, 3317623, 3317651
Fax: 254-020-3315977
Email: directorgeneral@knbs.or.ke
Website: www.knbs.or.ke

Reference No. KNBS/Surv/15

25th June, 2020

Lydiah Kiburu
Doctoral Student
Strathmore Business School
Email: lydiah.kiburu@strathmore.edu
Cell: 0763310022
NAIROBI

RE: REQUEST TO ACCESS NASSEP V SAMPLING FRAMEWORK FOR A PHD STUDY ON MOBILE BANKING USAGE BY CUSTOMERS IN KENYA

Reference is made to your letter dated 23rd June, 2020 requesting Kenya National Bureau of Statistics (KNBS) to allow you to access the National Sample Survey and Evaluation Program (NASSEP)V framework and use it to sample respondents for the above mentioned study.

Please note that the Bureau does not allow access to the NASSEP V sampling frame. However, the Bureau can draw the required sample according to your sample design. For this purpose, liaise with the Manager, Sampling, Methods and Standards to arrange for a meeting to discuss details of your sample design. You may get in touch with him through his email address jkinyanjui@knbs.or.ke.

Zachary Mwangi, EBS
DIRECTOR GENERAL

APPENDIX C: STRATHMORE ETHICAL APPROVAL

Strathmore UNIVERSITY

18th July 2020

Ms Kiburu, Lydiah
lydiah.kiburu@strathmore.edu

Dear Ms Kiburu,

RE: Consumer Attitudes, Social Networks and Technology Usage: Evidence from Mobile Banking Customers in Kenya

This is to inform you that SU-IERC has reviewed and **approved** your above research proposal. Your application approval number is **SU-IERC0859/20.** The approval period is **18th July 2020 to 17th July 2021.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

for. Dr Virginia Gichuru,
Secretary; SU-IERC

Cc: Prof Fred Were,
Chairperson; SU-IERC

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE SU-IERC
18 AUG 2020
TEL: +254 (0)703 034 600
P. O. Box 59857 - 00200
NAIROBI - KENYA

APPENDIX D: NACOSTI ETHICAL APPROVAL

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 348226

Date of Issue: 26/August/2020

RESEARCH LICENSE

This is to Certify that Ms.. Lydiah Wambui Kiburu of Strathmore University, has been licensed to conduct research in Kajiado, Machakos, Nairobi on the topic: CONSUMER ATTITUDES, SOCIAL NETWORKS AND TECHNOLOGY USAGE: EVIDENCE FROM MOBILE BANKING CUSTOMERS IN KENYA for the period ending : 26/August/2021.

License No: NACOSTI/P/20/6319

348226

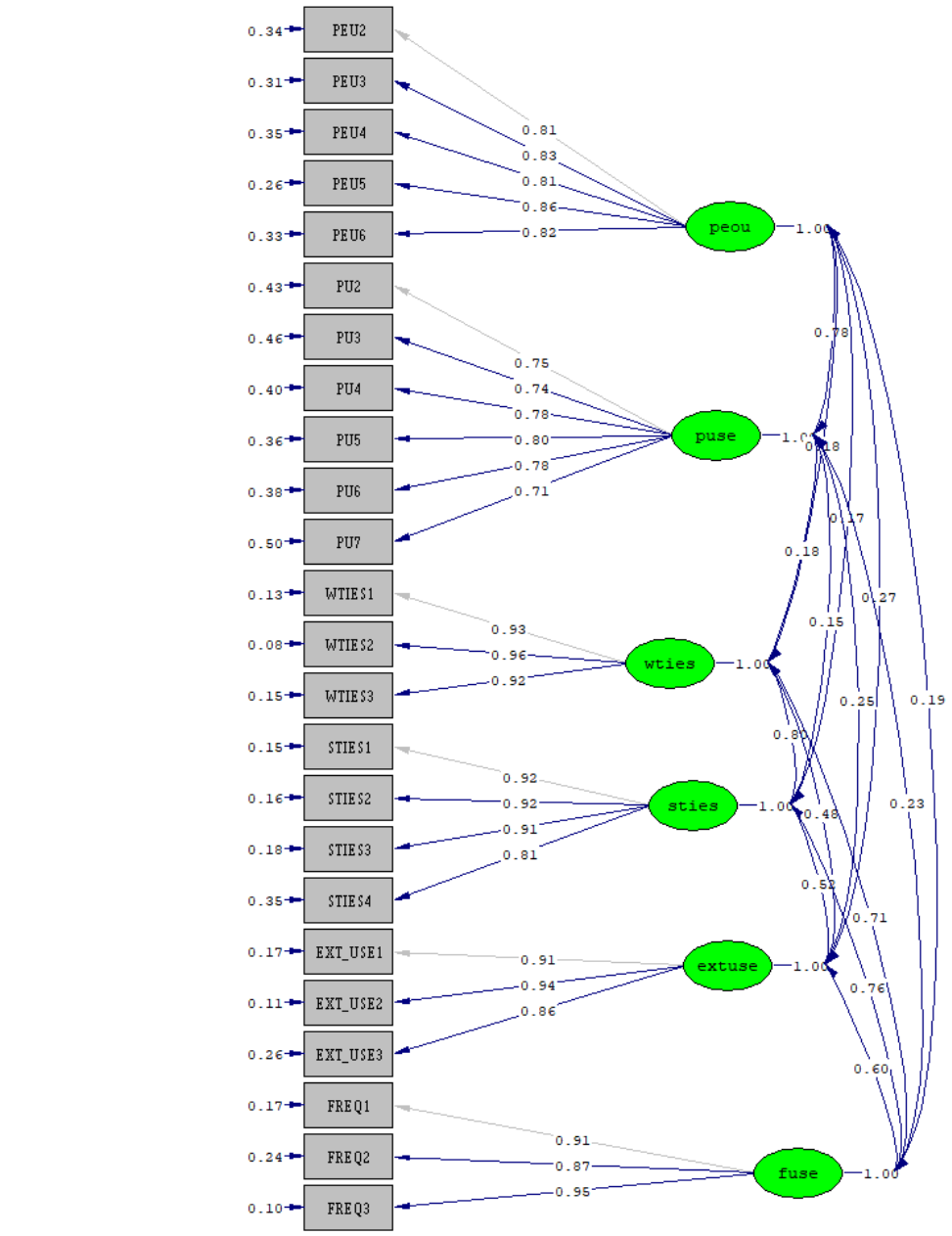
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

APPENDIX E: CFA DIAGRAM



Chi-Square=626.28, df=237, P-value=0.00000, RMSEA=0.062

APPENDIX F: CLUSTER PER COUNTY SAMPLE

	KAJIADO	KIAMBU	MACHAKOS	NAIROBI	Total
Cluster visited	5	6	9	10	30
Homes per cluster visited	38 per cluster				
Total homes for entire study	190	228	342	380	1140
Total homes found	150	187	243	301	882
Total individual+ Household Screened	347	321	520	551	1739
Relocated/ Demolished/ Vacant / Hse Untraceable etc.	40	41	99	79	259
Individuals that did not give Consent	2	1	0	2	5
Individual interviewed age above 18 yrs	305	279	421	470	1475
Individual with mobile banking	101	90	91	143	425

APPENDIX G: SOCIAL MEDIA PAGES OF LARGE BANKS IN KENYA

		Facebook		Twitter		Instagram		Linked In	YouTube		Website
Name of the Bank	**Handle**	**Followers**	**Likes**	**Date Joined**	**Followers**	**Followers**	**Date Joined**	**Followers**	**Followers**	**Date Joined**	**Links**
Equity Bank	@KeEquityBank	1,041,378	990,950	Nov. 2012	380,055	38,876	Jan 2016	160,590	8,003	April 2013	https://equitygroupholdings.com/ke/
Cooperative Bank of Kenya	@coopbankenya	1,878,127	1,839,549	July 2011	602,957	63,963	July 2016	143,922	18,700	April 2012	https://www.co-opbank.co.ke/
KCB Bank	@kcbgroup	1,262,745	1,210,732	Oct. 2010	513,817	53,596	Jan 2014	129,804	35,000	Feb. 2012	https://ke.kcbgroup.com/
NCBA Bank Kenya	@ncbabank	391,324	374,394	March 2012	81,986	15,177	April 2014	34,905	5,004	Feb. 2019	https://ke.ncbagroup.com/
Absa Bank Kenya	@AbsaKenya	338,886	325,368	March 2011	178,670	20,883	Feb. 2018	20,837	5,044	May 2014	https://ke.kcbgroup.com/
Stanbic Bank	@StanbicKE	314,749	304,016	June 2014	76,195	4,095	July 2016	57,810	2,290	Dec. 2014	https://www.stanbicbank.co.ke/
Standard Chartered Bank	@StanChartKE	209,966	195,887	Feb. 2011	78,060	3,881	July 2021	3,505	No Account	N/A	https://www.sc.com/ke/
Diamond Trust Bank	@DiamondTrustBank	19,326	17,227	March 2012	11,776	2,624	Nov. 2017	36,033	725	Aug. 2014	https://dtbk.dtbafrica.com/
Central Bank of Kenya	@CBKKenya	39,000	Info not available	Nov 2011	381,800	None	N/A	21,304	2,048	Feb. 2011	https://www.centralbank.go.ke/
Kenya Bankers Association	@KenyaBankers	8,700	Info not available	June 2011	79,700	577	N/A	21,020	436	August 2013	https://www.kba.co.ke/

Source: Social media pages of large banks in Kenya

Only Twitter, Instagram and YouTube provide information on the day the banks opened the accounts.

APPENDIX H: MOBILE BANKING SURVEY

SURVEY OF CONSUMER TECHNOLOGY USAGE

Dear Survey Participant,

Thank you for your consideration to participate in this study that seeks to understand determinants of consumer usage of mobile banking services in Kenya. This study aims to obtain empirical evidence to advance scholarly knowledge and to support managerial decision making on mobile banking services. Your participation is, therefore, highly appreciated.

As you respond to this survey, you are assured that your response will be treated with strictest confidentiality, and the information obtained from this study will be used for academic purposes only. The questionnaire has specific instructions to follow and scales to use to indicate your responses. From your personal experiences with mobile banking services and interactions with others, kindly provide responses that represent the reality concerning the issues being studied in this research. Although some statements may appear quite similar, they are also unique in many ways, so kindly do well to respond to each statement. Please indicate how things really are rather than how you wish they were.

This study has a target respondent group, and it is important to ensure that each respondent falls within this group. The next sets of questions on this page have been structured to ensure that you meet the eligibility criteria to participate in this study. Please respond to the questions below, and kindly proceed to the main survey only if you are eligible.

Once again, thank you very much for your participation in this research. You may respond in complete frankness; all your answers will remain confidential.

YOUR ELIGIBILITY TO PARTICIPATE IN THIS STUDY

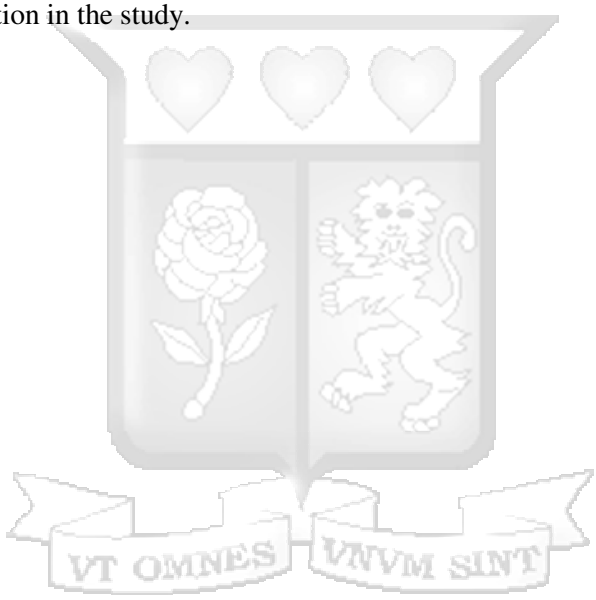
A. Kindly confirm that you are 18 years old or above: [ ] Yes [ ] No

If your response to **A** is yes, then please continue with the study. If your response to A is no, then kindly end your participation in the study. We do appreciate your time so far spent on this study.

B. Do you have mobile money Services (e.g. mpesa, airtel money, MTN money)? [ ] Yes [ ] No
If your answer to **B** is yes, then please continue with the study. If your answer to B is no, then kind end your participation in the study.

C. Do you have a bank account? [ ] Yes [ ] No
If your answer to C is yes, please continue with the study. If your answer C is no, then kind end your participation in the study.

D. Do you use a mobile bank account (can use your phone to access your bank account)? [ ] Yes [ ] No
If your answer to D is yes, please continue with the study. If your answer to D is no, then kind end your participation in the study.



SECTION A: YOUR EXPERIENCE OF USING MOBILE BANKING SERVICES

INSTRUCTIONS: Based on the respective scales provided, kindly circle a number that best represents your opinion on each statement.								
PART I: Your perception on usefulness and ease of using mobile banking services								
*SCALE: **1 = "strongly disagree" to 7 = "strongly agree"***		***Strongly Strongly disagree agree***						
1	Using the Mobile Banking service is easy for me	1	2	3	4	5	6	7
2	I find the use of mobile banking services clear and understandable	1	2	3	4	5	6	7
3	It is easy for me to understand the use of mobile banking services	1	2	3	4	5	6	7
4	Overall, I find the use of mobile banking services easy	1	2	3	4	5	6	7
5	I find mobile banking flexible to interact with	1	2	3	4	5	6	7
6	Learning to use mobile banking is easy for me	1	2	3	4	5	6	7
*SCALE: **1 = "strongly disagree" to 7 = "strongly agree"***		***Strongly Strongly disagree agree***						
7	Using mobile banking makes it simpler to do my banking transactions	1	2	3	4	5	6	7
8	Using mobile banking services makes it easier for me to do my banking	1	2	3	4	5	6	7
9	Using mobile banking services saves me time to do other important tasks	1	2	3	4	5	6	7
10	I find the mobile banking systems useful in conducting my banking transactions	1	2	3	4	5	6	7
11	Using mobile banking services enables me to accomplish my tasks more quickly	1	2	3	4	5	6	7
12	Using mobile banking makes it easier for me to carry out my tasks	1	2	3	4	5	6	7
13	I find mobile banking useful	1	2	3	4	5	6	7
14	Overall, there are many advantages of using mobile banking	1	2	3	4	5	6	7
PART II: Your social networking activities								
*SCALE: **1 = "Not at all" to 7 = "To an extreme extent"***		***Not at all***						***To an extreme extent***
15	I interact with my acquaintances to access new information about mobile banking services	1	2	3	4	5	6	7
16	I interact with personal friends to access new information about mobile banking services	1	2	3	4	5	6	7
17	I put in lots of efforts in developing and maintaining relationships with the right people to access new information on mobile banking services	1	2	3	4	5	6	7
18	I often rely on my friends for information on mobile banking services	1	2	3	4	5	6	7
SCALE: 1 = "Strongly disagree" to 7 = "Strongly agree"		***Not at all***						***To an extreme extent***

16	I interact with my close relatives on issues relating to mobile banking services	1 2 3 4 5 6 7
17	I have close relatives with whom I often interact on issues relating to mobile banking services	1 2 3 4 5 6 7
18	I have several relatives I trust so much to discuss my private financial matters	1 2 3 4 5 6 7
19	I have neighbours with whom I interact frequently on issues relating to mobile banking services	1 2 3 4 5 6 7
20	I have close friends with whom I interact frequently on issues relating to mobiles banking services	1 2 3 4 5 6 7

Part III: Regarding supports you receive from your social networks		
SCALE: 1 = "strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
21	People who are important to me often recommend mobile banking services to me	1 2 3 4 5 6 7
22	People who are important to me often suggest that I should use mobile banking services	1 2 3 4 5 6 7
23	People who are important to me expect me to use mobile banking services	1 2 3 4 5 6 7
SCALE: 1 = "strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
24	When I encounter difficulties in using mobile banking services, I ask for help from my contacts	1 2 3 4 5 6 7
25	When I encounter difficulties using mobile banking services, I seek help from my contacts who are experts in banking	1 2 3 4 5 6 7
26	When I encounter difficulties in using mobile banking services, I rely on my contacts to offer me ideas on how to resolve it	1 2 3 4 5 6 7
27	When I find it difficult to use a function in the mobile banking services, I rely on my contacts to help me out	1 2 3 4 5 6 7
28	I find it easy to discuss my mobile banking experience with my closest contacts	1 2 3 4 5 6 7
29	When I have a problem with my mobile banking, I prefer to call the bank	1 2 3 4 5 6 7
30	I engage my online forums (e.g. social media, WhatsApp groups) to understand mobile banking services	1 2 3 4 5 6 7
PART IV: Regarding your level of use of mobile banking services		
SCALE: 1 = "Strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
31	I use mobile banking services a lot	1 2 3 4 5 6 7
32	I use mobile banking services at all times	1 2 3 4 5 6 7
33	Mobile banking is part of my life	1 2 3 4 5 6 7
SCALE: 1 = "Strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree

34	I often use mobile banking services for all my financial transactions	1 2 3 4 5 6 7
35	My usage of mobile banking services is very frequent	1 2 3 4 5 6 7
		Very Infrequently Very Frequently
36	How frequently do you use mobile banking services?	1 2 3 4 5 6 7
Part V: Trust, Security and Safety of technology		
SCALE: 1 = "strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
37	I trust my bank to offer secure mobile banking services	1 2 3 4 5 6 7
38	Using mobile banking will not leak my personal information	1 2 3 4 5 6 7
39	I trust my bank to protect my privacy when I use mobile banking	1 2 3 4 5 6 7
40	I trust my telecommunication operator to provide secure data connections to conduct mobile banking transactions	1 2 3 4 5 6 7

SCALE: 1 = "strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
41	I find mobile banking secure in conducting my transactions	1 2 3 4 5 6 7
42	Mobile banking services does not compromise the security of my account and funds	1 2 3 4 5 6 7
43	The transaction process in mobile banking is transparent	1 2 3 4 5 6 7
44	The transaction process in mobile banking is traceable	1 2 3 4 5 6 7
SCALE: 1 = "strongly disagree" to 7 = "strongly agree"		Strongly Strongly agree disagree
45	I feel totally safe when using mobile banking services	1 2 3 4 5 6 7
46	I find conducting transactions with mobile banking services a danger to my sensitive information.	1 2 3 4 5 6 7
47	The security systems built into mobile banking services are strong enough to protect my transactions	1 2 3 4 5 6 7
48	Overall, it is risky to use mobile banking services	1 2 3 4 5 6 7

SECTION B: BACKGROUND INFORMATION & DEMOGRAPHICS

INSTRUCTIONS: This section seeks to gather some demographic data for the research. Kindly indicate your answer by writing your answers and select by checking (√) where appropriate.

49>> Gender: Male [ ] Female [ ]

50>> Age of respondent (years)

Less than 20 [ ] 21-30 [ ] 31-40 [ ] 41-50 [ ] 51-60 [ ] Above 60 [

]

51>> Please indicate your employment status

Student [ ] Self Employed[ ] Salaried worker[ ] Unemployed[ ] Retired[ ]

52>> Level of Education

Up to Primary School [ ] Up to Secondary School [ ] Up to First Degree [ ]

Up to Master's Degree [ ] Up to PhD [ ]

53>> Please select your monthly income category

Up to Ksh. 50000 [ ] Ksh. 51000 - 100000 [ ] ksh. 101000 – 150000 [ ]
Ksh. 150000 - 200000 [ ] Above ksh. 200000 [ ]

54>> Have you ever travelled outside Kenya?

Yes [ ] No [ ]

55>> What type of mobile phone do you use?

Smartphone [ ] Feature phone [ ]

56>> How long (in years) have you been using a mobile phone?

Less than one year [ ] Between 1 and 3 years [ ] Between 4 and 5 years [ ] Above 5 years [ ]

57>> How many mobile devices do you own (i.e. mobile phone, tablet, laptop)?

_____

58>> How many mobile Apps do you regularly use? _____

59>> Do you use internet service on your mobile device?

Yes [ ] No [ ]

60>> How long have you had a bank account?

Less than one year [ ] Between 1 and 3 years [ ] Between 4 and 5 years [ ] Above 5 years [ ]

61>> With which of the following Banks do you transact business (Please tick as many as applicable)

KCB [ ] Equity Bank [ ] Coop Bank [ ] DTB [ ]
Standard chartered [ ] Barclays [ ] Other [ ] , please specify

_____

62>> When did you subscribe to your first mobile banking service?

Less than one year ago[ ] Between 1 and 3 years ago[ ] Between 4 and 5 years ago[ ] More than 5 years [ ]

63>> Have you subscribed to mobile money services? (e.g. Mpesa, Airtel money)

Yes [ ] No [ ]

64>> How many people in your household are above 18 years of age?

_____

65>> How often do you use mobile banking services ?

I don't use at all [ ] About once a week [ ] Several times each day [ ]

About once each day [ ] Several times each day [ ]

To what extent do you disagree or agree with the following statements?	***Strongly disagree***					***Strongly agree***
The questionnaire deals with issues I am very knowledgeable about	1	2	3	4	5	6 7
I am completely confident about my answers to the questions	1	2	3	4	5	6 7
I am confident that my answers reflect the company's situation	1	2	3	4	5	6 7

END OF SURVEY

THANK YOU ONCE AGAIN FOR YOUR PARTICIPATION IN THIS SURVEY

APPENDIX I: SAMPLE POPULATION LIST

Cluster	County	SubLocation	EAName	StructureNumber	HH No	Sex	Occupation
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**001**	**003**	Male	SELF EMPLOYED
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**001**	**109**	Male	JUA KALI
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**003**	**168**	Male	ENGINEER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**005**	**010**	Male	HARWKER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**007**	**014**	Female	BUSINESS WOMAN
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**009**	**017**	Female	DESIGNER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**009**	**021**	Female	BUSINESS LADY
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**009**	**115**	Female	HUSTLER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**014**	**027**	Male	FARMER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**019**	**032**	Female	BUSINESS WOMAN
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**021**	**036**	Male	BUSINESS LADY
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**021**	**040**	Male	BUSINESS MAN
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**025**	**044**	Male	PENSIONS OFFICER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**030**	**048**	Male	BUSINESS MAN
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**032**	**116**	Male	DOCTOR
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**034**	**059**	Male	PREMIUM COMPANY
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**039**	**166**	Male	PROCUREMENT OFFICER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**042**	**066**	Male	Teacher
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**044**	**070**	Male	SALONIST
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**044**	**122**	Male	TRUCK DRIVER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**050**	**077**	Male	Kplc
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**052**	**081**	Male	HOUSE AGENT
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**056**	**085**	Male	ENGINEER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**061**	**163**	Male	NGO
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**064**	**164**	Male	QUANTITY SURVIVOR
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**069**	**094**	Male	POLICE OFFICER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**069**	**098**	Male	Jua kali
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**069**	**136**	Male	JUA KALI
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**069**	**140**	Male	MECHANIC
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**071**	**103**	Male	WELDING
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**072**	**105**	Male	KPLC
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**073**	**147**	Female	TRAINNOR
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**074**	**159**	Male	CONTRACTOR
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**076**	**155**	Male	MJENGO
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**079**	**126**	Male	CARPENTER
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**081**	**129**	Male	JUA KALI
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**091**	**149**	Female	HOUSE WIFE
1093	KAJIADO	KITENGELA	NOONKOPIR 'D'	**091**	**153**	Female	EPZ
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**004**	**005**	Female	BUSINESS LADY

1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**005**	**006**	Female	BUSINESS LADY
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**005**	**009**	Male	BUSINESS LADY
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**007**	**013**	Male	CARETAKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**013**	**022**	Female	RETIRED
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**015**	**024**	Male	CASUAL LABOURER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**015**	**027**	Male	TAXI DRIVER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**020**	**031**	Male	CARETAKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**024**	**150**	Male	BUSINESS MAN
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**027**	**037**	Male	ENTREPRENEUR
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**034**	**051**	Male	BUSINESS MAN
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**035**	**054**	Male	ELECTRICIAN
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**036**	**055**	Male	KDF
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**036**	**058**	Male	FARMER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**037**	**063**	Female	ju kali
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**038**	**065**	Female	CASUAL LABOURER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**038**	**069**	Female	STUDENT
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**039**	**073**	Female	JUAKALI
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**040**	**076**	Female	RETIRED
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**042**	**078**	Female	BUSINESS LADY
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**044**	**082**	Female	CASUAL WORKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**044**	**087**	Female	casual labourer
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**044**	**089**	Male	CASUAL WORKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**046**	**096**	Female	NAIVAS WORKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**046**	**099**	Male	CASUAL LABOURER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**047**	**102**	Female	CASUAL WORKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**048**	**104**	Male	CASUAL WORKER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**049**	**109**	Male	SECURITY
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**050**	**113**	Female	CASUAL LABOURER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**050**	**114**	Female	HOTELIER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**052**	**122**	Male	DRIVER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**052**	**125**	Male	CONDUCTOR
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**053**	**133**	Female	SALESWOMAN
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**053**	**135**	Female	HOTELIER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**054**	**140**	Male	SUPERMARKET
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**055**	**145**	Male	SALES MARKETER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**055**	**146**	Male	CASUAL LABOURER
1098	KAJIADO	OLEPOLOS	BULBUL 'B'	**057**	**149**	Male	BUSINESS MAN
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**004**	**004**	Male	POULTRY FARMER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**006**	**005**	Male	TRANSPORTER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**009**	**008**	Female	CASUAL
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**011**	**010**	Male	CASUAL
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**014**	**021**	Female	Water Bussiness

3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**020**	**029**	Male	CASUAL WORKER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**021**	**033**	Female	HOUSEWIFE
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**022**	**037**	Male	CASUAL LABOURER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**023**	**039**	Male	BODA BODA OPERATOR
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**027**	**047**	Male	CONDUCTOR
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**029**	**049**	Male	SHOE REPAIRER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**035**	**054**	Female	HOUSEWIFE
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**037**	**059**	Female	FARMER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**038**	**061**	Female	BUSINESSLADY
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**043**	**074**	Female	CASUAL
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**043**	**076**	Male	Car wash
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**048**	**081**	Female	House wife
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**048**	**142**	Male	MACHANIC
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**051**	**086**	Female	BUSINESS LADY
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**054**	**088**	Female	FARMER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**060**	**094**	Male	MASON
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**063**	**097**	Male	CASUAL WORKER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**065**	**099**	Male	CASUAL WORKER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**069**	**103**	Male	FARMER
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**073**	**113**	Male	Jua kali
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**074**	**135**	Male	Bodaboda
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**074**	**121**	Female	BUSINESS
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**076**	**152**	Female	Driver
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**076**	**151**	Male	casual worker
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**077**	**130**	Male	MECHANIC
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**081**	**140**	Male	BUSINESSMAN
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**153**	Female	Casuals
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**155**	Female	Caretaker
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**157**	Female	Business
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**160**	Female	Business
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**162**	Female	Casuals
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**085**	**166**	Male	SECURITY
3762	KAJIADO	NGONG TOWNSHIP	GICHAGI 'C'	**086**	**168**	Male	Tout
3766	KAJIADO	BULBUL	TOWN 'A'	**004**	**103**	Male	Police officer

3766	KAJIADO	BULBUL	TOWN 'A'	**005**	**161**	Male	Police Officer
3766	KAJIADO	BULBUL	TOWN 'A'	**005**	**165**	Female	Police Officer
3766	KAJIADO	BULBUL	TOWN 'A'	**006**	**009**	Male	Caretaker
3766	KAJIADO	BULBUL	TOWN 'A'	**006**	**007**	Male	Mwalimu
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**107**	Male	Architecture
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**113**	Male	Not known
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**109**	Male	Not Known
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**111**	Male	Logistician
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**116**	Male	Business
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**115**	Male	Business
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**016**	Female	Police Officer Karen
3766	KAJIADO	BULBUL	TOWN 'A'	**007**	**168**	Male	Baker
3766	KAJIADO	BULBUL	TOWN 'A'	**008**	**025**	Female	Housewife
3766	KAJIADO	BULBUL	TOWN 'A'	**008**	**088**	Female	Groceries Seller
3766	KAJIADO	BULBUL	TOWN 'A'	**009**	**129**	Male	Driver
3766	KAJIADO	BULBUL	TOWN 'A'	**009**	**127**	Male	Not Known
3766	KAJIADO	BULBUL	TOWN 'A'	**014**	**184**	Female	Garbage Collector
3766	KAJIADO	BULBUL	TOWN 'A'	**014**	**187**	Male	Teacher
3766	KAJIADO	BULBUL	TOWN 'A'	**018**	**049**	Female	SUPERMARKET ATTENDANT
3766	KAJIADO	BULBUL	TOWN 'A'	**019**	**193**	Male	Not Known
3766	KAJIADO	BULBUL	TOWN 'A'	**019**	**192**	Male	Business
3766	KAJIADO	BULBUL	TOWN 'A'	**019**	**051**	Female	Business
3766	KAJIADO	BULBUL	TOWN 'A'	**019**	**093**	Male	Booster
3766	KAJIADO	BULBUL	TOWN 'A'	**019**	**201**	Male	Not Known
3766	KAJIADO	BULBUL	TOWN 'A'	**020**	**052**	Male	Accountant
3766	KAJIADO	BULBUL	TOWN 'A'	**020**	**056**	Male	Juacali
3766	KAJIADO	BULBUL	TOWN 'A'	**020**	**206**	Female	Juakali
3766	KAJIADO	BULBUL	TOWN 'A'	**021**	**062**	Female	Biashara
3766	KAJIADO	BULBUL	TOWN 'A'	**025**	**207**	Male	Juakali
3766	KAJIADO	BULBUL	TOWN 'A'	**025**	**212**	Male	Not known
3766	KAJIADO	BULBUL	TOWN 'A'	**026**	**154**	Male	BUSINESS
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**141**	Female	works in a hospital
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**135**	Male	Casual Worker
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**120**	Male	Mechanic
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**172**	Male	Not Known
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**175**	Male	Driver
3766	KAJIADO	BULBUL	TOWN 'A'	**031**	**179**	Male	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**002**	**009**	Female	Cashier
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**002**	**014**	Female	Salonist
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**002**	**005**	Male	DRIVER
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**004**	**019**	Female	Self employed
5134	KAJIADO	ONGATA	KIMANDIRU	**007**	**022**	Female	BUSINESSWOMAN

		RONGAI					
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**009**	**024**	Female	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**013**	**030**	Male	CHURCH MAINTANCE
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**014**	**031**	Male	
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**016**	**035**	Male	PARLIAMENT WORKER
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**018**	**038**	Female	Student
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**020**	**041**	Male	Doctor
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**020**	**043**	Male	Accountant
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**021**	**046**	Female	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**030**	**052**	Male	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**036**	**058**	Male	ACCOUNTANT
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**038**	**060**	Female	Self employed
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**043**	**065**	Male	BUSINESSMAN
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**045**	**067**	Male	Retired teacher
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**049**	**071**	Female	Parliament
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**051**	**073**	Male	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**054**	**087**	Male	Consultant
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**056**	**089**	Male	Business
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**059**	**092**	Female	Teacher
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**064**	**160**		
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**069**	**101**	Male	TEACHER
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**074**	**105**	Male	Lecturer
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**077**	**108**	Male	BUSINESS MAN
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**081**	**111**	Male	Tourism
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**083**	**114**	Female	BUSINESSWOMAN
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**084**	**118**	Male	Lecturer
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**085**	**126**	Female	Retired
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**087**	**128**	Female	Producer
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**089**	**131**	Female	RETIRED OFFICER
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**090**	**132**	Female	CHURCH worker
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**091**	**144**	Female	BUSINESS
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**091**	**140**	Female	Poster
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**091**	**142**	Male	Mechanic
5134	KAJIADO	ONGATA RONGAI	KIMANDIRU	**096**	**152**	Male	Business

938	KIAMBU	RUAKA	RUAKA URBAN	**004**	**003**	Male	CASUAL LABOURER
938	KIAMBU	RUAKA	RUAKA URBAN	**006**	**015**	Male	WELDER
938	KIAMBU	RUAKA	RUAKA URBAN	**009**	**020**	Female	CASUAL LABOURER
938	KIAMBU	RUAKA	RUAKA URBAN	**010**	**023**	Male	ACCOUNTANT
938	KIAMBU	RUAKA	RUAKA URBAN	**013**	**028**	Male	GARDENER
938	KIAMBU	RUAKA	RUAKA URBAN	**014**	**032**	Male	SECURITY GUARD
938	KIAMBU	RUAKA	RUAKA URBAN	**015**	**037**	Male	CARPENTER
938	KIAMBU	RUAKA	RUAKA URBAN	**016**	**042**	Male	FLORIST
938	KIAMBU	RUAKA	RUAKA URBAN	**018**	**046**	Female	FARMER
938	KIAMBU	RUAKA	RUAKA URBAN	**021**	**054**	Male	Businessman
938	KIAMBU	RUAKA	RUAKA URBAN	**022**	**059**	Female	NURSE
938	KIAMBU	RUAKA	RUAKA URBAN	**022**	**169**	Female	CASUAL LABOURER
938	KIAMBU	RUAKA	RUAKA URBAN	**023**	**170**	Female	BUSINESS WOMAN
938	KIAMBU	RUAKA	RUAKA URBAN	**024**	**067**	Female	CASUAL WORKER
938	KIAMBU	RUAKA	RUAKA URBAN	**024**	**071**	Male	TAXI DRIVER
938	KIAMBU	RUAKA	RUAKA URBAN	**025**	**197**	Female	Tailor
938	KIAMBU	RUAKA	RUAKA URBAN	**026**	**079**	Male	SECURITY GUARD
938	KIAMBU	RUAKA	RUAKA URBAN	**027**	**084**	Male	UNEMPLOYED(ELDERLY)
938	KIAMBU	RUAKA	RUAKA URBAN	**029**	**088**	Male	GARDENER
938	KIAMBU	RUAKA	RUAKA URBAN	**029**	**093**	Male	LABOURER CASUAL
938	KIAMBU	RUAKA	RUAKA URBAN	**032**	**181**	Male	BUSINESS MAN
938	KIAMBU	RUAKA	RUAKA URBAN	**033**	**102**	Male	security Officer
938	KIAMBU	RUAKA	RUAKA URBAN	**035**	**106**	Male	BUSINESS MAN
938	KIAMBU	RUAKA	RUAKA URBAN	**038**	**110**	Female	SHOPKEEPER
938	KIAMBU	RUAKA	RUAKA URBAN	**039**	**115**	Male	TAXI DRIVER
938	KIAMBU	RUAKA	RUAKA URBAN	**039**	**119**	Male	SECURITY OFFICER
938	KIAMBU	RUAKA	RUAKA URBAN	**041**	**200**	Female	HAIRDRESSER
938	KIAMBU	RUAKA	RUAKA URBAN	**042**	**128**	Male	SECURITY GUARD
938	KIAMBU	RUAKA	RUAKA URBAN	**043**	**133**	Male	CASUAL LABOURER
938	KIAMBU	RUAKA	RUAKA URBAN	**044**	**137**	Male	HERBERLIST
938	KIAMBU	RUAKA	RUAKA URBAN	**045**	**143**	Male	MECHANIC
938	KIAMBU	RUAKA	RUAKA URBAN	**046**	**148**	Male	DRIVER
938	KIAMBU	RUAKA	RUAKA URBAN	**046**	**152**	Male	CONTRACTOR
938	KIAMBU	RUAKA	RUAKA URBAN	**046**	**157**	Female	TOUR OPERATOR
938	KIAMBU	RUAKA	RUAKA URBAN	**047**	**176**	Male	TEACHER
938	KIAMBU	RUAKA	RUAKA URBAN	**049**	**184**	Male	BUSINESS MAN
938	KIAMBU	RUAKA	RUAKA URBAN	**049**	**188**	Male	LAWYER
938	KIAMBU	RUAKA	RUAKA URBAN	**049**	**193**	Female	SALES LADY
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**005**	Male	BUSINESS MAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**011**	Male	CASUAL WORKER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**014**	Male	ARTISTIC
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**018**	Male	BUSINESS LADY

941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**022**	Male	BUSINESSMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**026**	Male	ACCOUNTANT
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**029**	Male	CASUAL LABOURER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**034**	Male	ENGINEER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**001**	**039**	Male	CIVIL SERVANT
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**003**	**044**	Female	ARCHITECTURER LABOURER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**006**	**153**	Female	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**008**	**051**	Male	ENGINEER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**008**	**057**	Female	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**009**	**059**	Male	BUSINESSMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**011**	**063**	Male	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**011**	**155**	Female	HOUSE WIFE
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**016**	**067**	Male	BUSINESS MAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**017**	**071**	Male	SUPERMARKET ATTENDANT
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**018**	**075**	Male	CARPENTER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**020**	**079**	Male	CARPENTER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**024**	**082**	Female	Civil Servant
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**026**	**088**	Male	AUDITOR
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**026**	**093**	Male	AUDITOR
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**027**	**099**	Female	STUDENT
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**027**	**102**	Male	SUPERMARKET ATTENDANT
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**028**	**105**	Female	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**028**	**110**	Male	CASUAL WORKER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**028**	**113**	Male	business man
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**029**	**118**	Female	business lady
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**030**	**120**	Male	DRIVER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**031**	**125**	Male	DRIVER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**031**	**128**	Female	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**031**	**132**	Male	Driver
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**032**	**135**	Female	BUSINESSWOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**032**	**139**	Female	BUSINESS WOMAN
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**032**	**143**	Male	HAIRDRESSER
941	KIAMBU	KINOO	MUTHIGA CENTRAL	**033**	**147**	Female	
941	KIAMBU	KINOO	MUTHIGA	**035**	**151**	Male	BUSINESSMAN

			CENTRAL				
3606	KIAMBU	RUAKA	RUMENYE	**001**	**001**	Male	MASON
3606	KIAMBU	RUAKA	RUMENYE	**001**	**003**	Female	Business
3606	KIAMBU	RUAKA	RUMENYE	**001**	**096**	Female	Business
3606	KIAMBU	RUAKA	RUMENYE	**001**	**098**		
3606	KIAMBU	RUAKA	RUMENYE	**006**	**015**	Male	CARETAKER
3606	KIAMBU	RUAKA	RUMENYE	**007**	**018**	Male	Business
3606	KIAMBU	RUAKA	RUMENYE	**007**	**020**	Male	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**007**	**022**	Male	Business
3606	KIAMBU	RUAKA	RUMENYE	**007**	**024**	Female	Business
3606	KIAMBU	RUAKA	RUMENYE	**007**	**100**	Female	Business
3606	KIAMBU	RUAKA	RUMENYE	**009**	**035**	Female	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**009**	**037**	Male	Business
3606	KIAMBU	RUAKA	RUMENYE	**009**	**039**	Male	Casual
3606	KIAMBU	RUAKA	RUMENYE	**010**	**105**	Male	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**010**	**107**	Female	Business
3606	KIAMBU	RUAKA	RUMENYE	**010**	**109**	Male	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**016**	**043**	Female	FARMER
3606	KIAMBU	RUAKA	RUMENYE	**021**	**047**	Male	FARMER
3606	KIAMBU	RUAKA	RUMENYE	**025**	**051**	Male	BUSINESSMAN
3606	KIAMBU	RUAKA	RUMENYE	**027**	**053**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**028**	**055**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**028**	**059**	Male	teacher
3606	KIAMBU	RUAKA	RUMENYE	**028**	**061**	Male	BUSINESS
3606	KIAMBU	RUAKA	RUMENYE	**029**	**066**	Male	CAR BROKER
3606	KIAMBU	RUAKA	RUMENYE	**031**	**068**	Female	FARMER
3606	KIAMBU	RUAKA	RUMENYE	**033**	**070**	Female	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**073**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**075**	Male	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**033**	**077**	Male	works in a company
3606	KIAMBU	RUAKA	RUMENYE	**033**	**079**	Female	casual
3606	KIAMBU	RUAKA	RUMENYE	**033**	**082**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**084**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**086**	Male	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**088**	Female	casual
3606	KIAMBU	RUAKA	RUMENYE	**033**	**091**	Female	business
3606	KIAMBU	RUAKA	RUMENYE	**033**	**093**	Male	casual
3606	KIAMBU	RUAKA	RUMENYE	**035**	**101**	Female	business
3606	KIAMBU	RUAKA	RUMENYE	**036**	**111**	Male	Driver
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**001**	**001**	Female	Business
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**001**	**004**	Female	BUSINESS WOMAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**001**	**007**	Female	BUSINESS WOMAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**001**	**009**	Female	BUSINESS WOMAN

3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**002**	**013**	Female	BUSINESSWOMAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**002**	**117**	Male	FARMER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**003**	**017**	Male	DRIVER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**003**	**027**	Male	BUSINESS MAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**003**	**023**	Male	WAITER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**003**	**025**	Female	Student
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**005**	**030**	Female	BUSINESSWOMAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**007**	**118**	Male	Business
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**008**	**036**	Male	FARMER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**011**	**051**	Male	BUSINESS MAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**011**	**054**	Male	PAINTER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**012**	**056**	Female	Student
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**012**	**059**	Male	MECHANIC
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**012**	**062**	Female	Student
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**013**	**064**	Male	Mechanic
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**014**	**067**	Female	LANDLORD
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**014**	**070**	Male	Casual
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**014**	**072**	Male	Driver
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**075**	Female	Business
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**079**	Male	STUDENT
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**081**	Male	Employed
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**084**	Female	BUSINESS LADY
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**087**	Female	STUDENT
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**089**	Male	Employed
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**092**	Female	HOUSEWIFE
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**095**	Female	Employed
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**097**	Male	BUSINESSMAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**100**	Male	CASUAL
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**102**	Female	CASUAL
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**105**	Male	BUSINESS MAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**108**	Male	DRIVER
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**015**	**110**	Female	SALONIST
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**016**	**116**	Male	BUSINESS MAN
3615	KIAMBU	MAJENGO	MAJENGO BLOCK 2	**016**	**121**	Female	business
3622	KIAMBU	RUIRU	RELI	**001**	**007**	Male	DRIVER
3622	KIAMBU	RUIRU	RELI	**001**	**001**	Male	EMPLOYED
3622	KIAMBU	RUIRU	RELI	**001**	**008**	Male	EMPLOYED
3622	KIAMBU	RUIRU	RELI	**001**	**005**	Male	EMPLOYED
3622	KIAMBU	RUIRU	RELI	**002**	**021**	Male	EMPLOYED
3622	KIAMBU	RUIRU	RELI	**002**	**017**	Male	RAIL WORKER
3622	KIAMBU	RUIRU	RELI	**002**	**018**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**002**	**019**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**003**	**022**	Male	CASUAL

3622	KIAMBU	RUIRU	RELI	**003**	**026**	Female	HOTELIER
3622	KIAMBU	RUIRU	RELI	**003**	**028**	Male	BUTCHER
3622	KIAMBU	RUIRU	RELI	**004**	**037**	Male	DRIVER
3622	KIAMBU	RUIRU	RELI	**004**	**036**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**004**	**035**	Female	EMPLOYED
3622	KIAMBU	RUIRU	RELI	**004**	**034**	Female	BUSINESS
3622	KIAMBU	RUIRU	RELI	**004**	**093**		
3622	KIAMBU	RUIRU	RELI	**004**	**095**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**006**	**041**	Male	BUSINESS MAN
3622	KIAMBU	RUIRU	RELI	**006**	**039**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**006**	**097**	Male	Employed at Unga Ltd
3622	KIAMBU	RUIRU	RELI	**007**	**051**	Male	BUSINESS
3622	KIAMBU	RUIRU	RELI	**007**	**049**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**007**	**060**	Male	BUSINESS
3622	KIAMBU	RUIRU	RELI	**007**	**057**	Female	BUSINESS
3622	KIAMBU	RUIRU	RELI	**007**	**058**	Female	CASUAL
3622	KIAMBU	RUIRU	RELI	**008**	**071**	Female	SHOPKEEPER
3622	KIAMBU	RUIRU	RELI	**008**	**070**	Male	STUDENT
3622	KIAMBU	RUIRU	RELI	**008**	**068**	Female	CASUAL
3622	KIAMBU	RUIRU	RELI	**008**	**066**	Female	STUDENT
3622	KIAMBU	RUIRU	RELI	**009**	**075**	Male	EMPLOYEE BROOKSIDE
3622	KIAMBU	RUIRU	RELI	**009**	**076**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**009**	**074**	Male	EMPLOYED AT SPINNERS
3622	KIAMBU	RUIRU	RELI	**009**	**078**	Male	CONSTRUCTION
3622	KIAMBU	RUIRU	RELI	**010**	**080**	Female	BUSINESS
3622	KIAMBU	RUIRU	RELI	**011**	**090**	Male	CASUAL
3622	KIAMBU	RUIRU	RELI	**011**	**087**	Female	CASUAL
3622	KIAMBU	RUIRU	RELI	**011**	**085**	Male	HAWKER
3622	KIAMBU	RUIRU	RELI	**011**	**099**	Male	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**001**	**002**	Male	EMPLOYEE
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**001**	**001**	Male	FARMER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**003**	**004**	Male	BUSINESS
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**005**	**007**	Female	BUSINESS MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**007**	**009**	Female	HOME MAKER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**009**	**011**	Male	BUSINESS
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**009**	**083**	Female	BUSINESS LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**010**	**013**	Male	PASTOR
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**012**	**015**	Male	PLUMBER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**014**	**017**	Female	BUSINESS WOMAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**015**	**085**	Female	BUSINESS LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**016**	**081**	Male	AUDITOR
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**017**	**080**	Male	NOT WORKING

4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**020**	**021**	Male	STUDENT
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**020**	**028**	Male	BUSINESS MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**021**	**024**	Female	LAND LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**023**	**026**	Male	BUSINESS MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**023**	**027**	Male	BUSINESS MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**023**	**030**	Male	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**023**	**032**	Male	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**024**	**034**	Male	WELDER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**024**	**036**	Male	CASUAL LABOURER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**024**	**038**	Female	BUSINESS
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**024**	**039**	Female	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**025**	**041**	Male	MASON
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**026**	**042**	Female	BAR ATTENDANT
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**026**	**044**	Male	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**028**	**048**	Female	BUSINESS LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**030**	**050**	Female	CASUAL LABOURER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**031**	**052**	Male	EMPLOYED
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**033**	**055**	Male	CASUAL LABOURER
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**033**	**057**	Male	CASUAL
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**035**	**059**	Female	BUSINESS LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**036**	**060**	Male	SALES MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**039**	**062**	Male	BUSINESS MAN
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**041**	**064**	Female	BUSINESS LADY
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**042**	**066**	Female	RETIREE
4991	KIAMBU	UTHIRU	UTHIRU NURSERY	**044**	**068**	Male	CASUAL
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**002**	**004**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**002**	**007**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**002**	**010**	Male	Crane Operator
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**003**	**017**	Female	Househelp
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**004**	**022**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**004**	**025**	Male	Supervisor Civicor
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**004**	**027**	Male	Boda Boda
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**005**	**030**	Male	BARBER
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**005**	**033**	Female	Research Assistant
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**005**	**037**	Female	Caretaker
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**006**	**041**	Male	CASUAL LABOURER
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**006**	**045**	Female	Housewife
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**006**	**048**	Female	Housewife
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**006**	**050**	Male	DRIVER

901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**007**	**054**	Male	BUSINESSMAN
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**007**	**057**	Male	WELDING
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**007**	**060**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**009**	**065**	Female	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**009**	**068**	Female	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**009**	**071**	Male	CASUAL LABOUR
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**010**	**074**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**010**	**076**	Female	Businesswoman
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**010**	**079**	Female	Housewife
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**011**	**082**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**011**	**086**	Male	BUSINESSMAN
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**011**	**089**	Male	MASON
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**011**	**092**	Male	Mechanic
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**012**	**095**	Male	Security Officer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**012**	**097**	Male	Boda Boda
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**012**	**100**	Male	Mason
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**012**	**103**	Male	CASUAL LABOURER
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**013**	**106**	Male	Casual Labourer
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**013**	**109**	Female	Caretaker
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**013**	**113**	Male	Tannery Selector
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**013**	**127**	Female	Teacher
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**014**	**119**	Male	Tannery Selector
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**014**	**121**	Male	Businessman
901	MACHAKOS	ATHI RIVER TOWNSHIP	CANAAN	**014**	**125**	Female	Hotel Waiter
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**004**	Male	Casual
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**005**	Female	Businesswoman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**009**	Male	SUPERMARKET ASSISTANT
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**012**	Male	Juakali
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**015**	Male	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**018**	Male	CASUAL WORKER
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**021**	Male	Cashier
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**023**	Male	Driver
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**026**	Male	DRIVER
2270	MACHAKO	SYOKIMAU	NGWATA ZONE 'C'	**003**	**028**	Female	Textile-tailoring

	S		UPPER				
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**003**	**029**	Male	Unknown
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**033**	Male	Driver
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**035**	Female	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**038**	Female	Businesswoman (Bar Owner)
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**040**	Male	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**043**	Female	Salonist
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**045**	Male	BUSINESS MAN
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**093**	Male	Caretaker
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**096**	Male	Businessman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**097**	Male	casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**101**	Male	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**103**	Male	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**106**	Male	Not Working
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**005**	**108**	Male	Not Known
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**052**	Female	Businesswoman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**055**	Female	Businesswomen
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**058**	Male	BUSINESS MAN
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**060**	Female	Housewife
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**061**	Male	Businessman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**065**	Male	DRIVER
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**067**	Female	Housewife
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**071**	Male	Businessman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**073**	Male	Businessman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**076**	Female	Housewife
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**078**	Female	Businesswoman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**081**	Female	Casual Labourer
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**083**	Female	Businesswoman
2270	MACHAKOS	SYOKIMAU	NGWATA ZONE 'C' UPPER	**006**	**084**	Male	Driver
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**001**	**001**	Female	PRE-SCHOOL TEACHER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**004**	**004**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**006**	**006**	Female	BUSINESS
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**011**	**011**	Female	farmer
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**014**	**014**	Male	BUSINESS

2894	MACHAKOS	KYETHIVO	KETULULU "A"	**018**	**017**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**021**	**020**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**024**	**023**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**027**	**026**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**030**	**029**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**033**	**032**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**037**	**036**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**040**	**039**	Female	BUSINESS
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**043**	**042**	Male	CASUAL WORKER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**045**	**044**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**048**	**047**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**051**	**050**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**054**	**053**	Male	business
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**057**	**056**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**062**	**061**	Female	PRIMARY TEACHER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**065**	**064**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**068**	**067**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**071**	**070**	Female	BUSINESS
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**074**	**073**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**077**	**076**	Male	VILLAGE ELDER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**080**	**079**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**084**	**083**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**086**	**085**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**090**	**089**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**093**	**092**	Male	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**096**	**095**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**099**	**098**	Female	FARMER
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**102**	**101**	Male	Farmer
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**117**	**105**	Male	Farmer
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**127**	**108**	Male	Business
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**131**	**111**	Female	Farmer
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**135**	**114**	Female	farmer
2894	MACHAKOS	KYETHIVO	KETULULU "A"	**144**	**118**	Female	Business
3569	MACHAKO	ATHI RIVER	MABATINI	**001**	**010**	Male	Steel plant operator

	S	TOWNSHIP					
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**005**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**006**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**008**	Male	CLERK
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**011**	Male	Weilder
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**002**	Male	Weilder
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**004**	Female	Housewife
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**013**	Male	Casual Labour
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**001**	**018**	Male	Driver
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**006**	**026**	Male	cashier
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**006**	**030**	Male	Businessman
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**006**	**016**	Male	Bussinesswoman
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**033**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**037**	Male	Machine Operator
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**039**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**041**	Male	Driver
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**043**	Female	Teacher
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**045**	Male	DRIVER
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**047**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**008**	**049**	Male	Bodaboda
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**009**	**060**	Female	BUSINESSLADY
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**009**	**051**	Male	CASUAL WORKER
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**009**	**053**	Male	Store Keeper
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**009**	**055**	Male	Teacher
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**009**	**057**	Male	Bodaboda
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**070**	Male	Casual Labourer Bamburi
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**072**	Male	Juacali Artisan
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**107**	Male	Machine operator
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**063**	Male	Casual worker
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**065**	Male	JUA KALI
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**066**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**010**	**068**	Male	Casual Labourer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**011**	**074**	Male	BUSINESSMAN
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**011**	**079**	Male	CASUAL LABOURER

3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**011**	**105**	Male	Mechanic
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**012**	**083**	Male	Security Officer
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**015**	**101**	Male	CASUAL WORKER
3569	MACHAKOS	ATHI RIVER TOWNSHIP	MABATINI	**015**	**103**	Female	Not known
4241	MACHAKOS	MUUMANDU	MALILI	**002**	**076**	Male	Gardener
4241	MACHAKOS	MUUMANDU	MALILI	**004**	**003**	Male	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**006**	**005**	Female	HOME SERVANT
4241	MACHAKOS	MUUMANDU	MALILI	**007**	**006**	Female	Hotelier
4241	MACHAKOS	MUUMANDU	MALILI	**009**	**008**	Female	Farmer
4241	MACHAKOS	MUUMANDU	MALILI	**011**	**010**	Male	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**013**	**012**	Male	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**015**	**013**	Male	SHAMBA BOY
4241	MACHAKOS	MUUMANDU	MALILI	**017**	**015**	Female	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**020**	**018**	Male	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**022**	**020**	Female	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**024**	**021**	Male	PRIMARY SCHOOL TEACHER
4241	MACHAKOS	MUUMANDU	MALILI	**028**	**024**	Female	HOUSEWIFE
4241	MACHAKOS	MUUMANDU	MALILI	**030**	**026**	Male	SHAMBA BOY
4241	MACHAKOS	MUUMANDU	MALILI	**031**	**027**	Female	HOUSE WIFE
4241	MACHAKOS	MUUMANDU	MALILI	**034**	**029**	Female	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**036**	**031**	Male	SHAMBA BOY
4241	MACHAKOS	MUUMANDU	MALILI	**038**	**033**	Female	Houseboy
4241	MACHAKOS	MUUMANDU	MALILI	**039**	**034**	Male	SHAMBA BOY
4241	MACHAKOS	MUUMANDU	MALILI	**041**	**036**	Female	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**044**	**038**	Female	Housewife
4241	MACHAKOS	MUUMANDU	MALILI	**046**	**040**	Male	Watchman
4241	MACHAKOS	MUUMANDU	MALILI	**047**	**041**	Male	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**055**	**047**	Female	Farmer
4241	MACHAKOS	MUUMANDU	MALILI	**058**	**050**	Male	Farmer/Business
4241	MACHAKOS	MUUMANDU	MALILI	**060**	**052**	Female	FARMER
4241	MACHAKOS	MUUMANDU	MALILI	**061**	**053**	Female	BUSINESS WOMAN
4241	MACHAKOS	MUUMANDU	MALILI	**064**	**066**	Male	Shaman Boy
4241	MACHAKOS	MUUMANDU	MALILI	**066**	**059**	Male	Shaman Boy
4241	MACHAKO	MUUMANDU	MALILI	**070**	**061**	Male	Farmer

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4241	MACHAKOS	MUUMANDU	MALILI	**071**	**062**	Male	Farmer
4241	MACHAKOS	MUUMANDU	MALILI	**074**	**064**	Male	Herdsman
4241	MACHAKOS	MUUMANDU	MALILI	**077**	**067**	Male	Casual Labourer
4241	MACHAKOS	MUUMANDU	MALILI	**078**	**068**	Male	Bodaboda
4241	MACHAKOS	MUUMANDU	MALILI	**080**	**070**	Male	Houseboy
4241	MACHAKOS	MUUMANDU	MALILI	**083**	**072**	Male	Bodaboda
4241	MACHAKOS	MUUMANDU	MALILI	**085**	**074**	Male	Farmer
4241	MACHAKOS	MUUMANDU	MALILI	**086**	**075**	Female	Farmer
4244	MACHAKOS	KANGII	SYALAVO	**005**	**005**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**006**	**006**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**009**	**009**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**013**	**013**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**014**	**014**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**018**	**017**	Male	BUSINESS AMN
4244	MACHAKOS	KANGII	SYALAVO	**022**	**021**	Male	WELDER
4244	MACHAKOS	KANGII	SYALAVO	**023**	**022**	Male	BUSINESS MAN
4244	MACHAKOS	KANGII	SYALAVO	**027**	**025**	Male	House boy
4244	MACHAKOS	KANGII	SYALAVO	**031**	**029**	Male	HOME SERVANT
4244	MACHAKOS	KANGII	SYALAVO	**033**	**030**	Male	HOME SERVANT
4244	MACHAKOS	KANGII	SYALAVO	**036**	**033**	Male	PASTOR
4244	MACHAKOS	KANGII	SYALAVO	**040**	**037**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**042**	**038**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**045**	**041**	Male	VILLAGE ELDER
4244	MACHAKOS	KANGII	SYALAVO	**049**	**045**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**050**	**046**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**053**	**049**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**057**	**053**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**058**	**054**	Female	BUSINESS WOMAN
4244	MACHAKOS	KANGII	SYALAVO	**062**	**058**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**066**	**062**	Male	HOME SERVANT
4244	MACHAKOS	KANGII	SYALAVO	**067**	**063**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**071**	**067**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**074**	**070**	Female	FARMER

4244	MACHAKOS	KANGII	SYALAVO	**077**	**073**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**081**	**077**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**082**	**078**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**085**	**081**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**091**	**086**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**092**	**087**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**095**	**090**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**099**	**094**	Male	HOME SERVANT
4244	MACHAKOS	KANGII	SYALAVO	**100**	**095**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**104**	**099**	Female	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**108**	**103**	Male	MASON
4244	MACHAKOS	KANGII	SYALAVO	**109**	**104**	Male	FARMER
4244	MACHAKOS	KANGII	SYALAVO	**112**	**107**	Male	house boy
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**001**	**001**	Male	Juacali/Masonry
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**005**	**005**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**010**	**010**	Male	Driver
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**016**	**016**	Female	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**020**	**020**	Male	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**024**	**024**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**028**	**028**	Female	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**032**	**032**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**036**	**036**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**040**	**040**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**045**	**045**	Male	CASUAL LABOURER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**049**	**049**	Male	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**053**	**054**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**058**	**058**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**062**	**062**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**066**	**066**	Male	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**071**	**071**	Male	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**075**	**075**	Female	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**079**	**079**	Female	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**083**	**083**	Male	FARMER
4246	MACHAKO	MAWELI	KATITHI/KISAANI	**087**	**087**	Female	FARMER

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4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**091**	**091**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**097**	**097**	Male	CASUAL LABOURER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**101**	**101**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**105**	**105**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**109**	**109**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**114**	**114**	Male	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**119**	**119**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**127**	**124**	Female	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**132**	**129**	Female	TEACHER PRIMARY
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**139**	**136**	Female	FARMER
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**144**	**141**	Male	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**148**	**145**	Female	Tailor
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**152**	**149**	Male	Bodaboda
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**158**	**153**	Male	Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**163**	**158**	Female	Housewife/farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**167**	**162**	Female	Housewife/Farmer
4246	MACHAKOS	MAWELI	KATITHI/KISAANI	**172**	**165**	Female	Primary School Teacher
4249	MACHAKOS	KIVAA	KITHUIA	**001**	**001**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**004**	**004**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**008**	**008**	Male	BUSINESS
4249	MACHAKOS	KIVAA	KITHUIA	**010**	**010**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**012**	**012**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**014**	**014**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**016**	**016**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**018**	**018**	Male	WATCHMAN
4249	MACHAKOS	KIVAA	KITHUIA	**020**	**020**	Female	BUSINESS LADY
4249	MACHAKOS	KIVAA	KITHUIA	**022**	**022**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**024**	**024**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**026**	**026**	Male	SECURITY OFFICER
4249	MACHAKOS	KIVAA	KITHUIA	**028**	**028**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**030**	**030**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**033**	**033**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**035**	**035**	Male	FARMER

4249	MACHAKOS	KIVAA	KITHUIA	**037**	**037**	Male	CASUAL LABOURER
4249	MACHAKOS	KIVAA	KITHUIA	**040**	**039**	Male	CASUAL LABOURER
4249	MACHAKOS	KIVAA	KITHUIA	**042**	**041**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**044**	**043**	Male	HERDSMAN
4249	MACHAKOS	KIVAA	KITHUIA	**047**	**046**	Female	BUSINESS LADY
4249	MACHAKOS	KIVAA	KITHUIA	**049**	**048**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**052**	**051**	Male	MECHANIC
4249	MACHAKOS	KIVAA	KITHUIA	**055**	**054**	Male	MASONRY
4249	MACHAKOS	KIVAA	KITHUIA	**059**	**057**	Male	BUSINESSMAN
4249	MACHAKOS	KIVAA	KITHUIA	**062**	**060**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**064**	**062**	Male	CASUAL LABOURER
4249	MACHAKOS	KIVAA	KITHUIA	**066**	**064**	Male	CASUAL LABOURER
4249	MACHAKOS	KIVAA	KITHUIA	**067**	**065**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**069**	**067**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**071**	**069**	Male	BUSINESSMAN
4249	MACHAKOS	KIVAA	KITHUIA	**073**	**071**	Female	SHOPKEEPER
4249	MACHAKOS	KIVAA	KITHUIA	**075**	**073**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**077**	**075**	Male	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**080**	**077**	Male	CASUAL LABOURER
4249	MACHAKOS	KIVAA	KITHUIA	**082**	**079**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**084**	**081**	Female	FARMER
4249	MACHAKOS	KIVAA	KITHUIA	**086**	**083**	Male	CASUAL LABOURER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**001**	**002**	Male	COOK
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**001**	**004**	Male	MASON
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**004**	**016**	Female	BUSINESS LADY
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**004**	**019**	Female	Bodaboda
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**005**	**020**	Male	CASUALS
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**006**	**028**	Male	SECURITT GUARD
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**007**	**033**	Male	Casuals
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**008**	**037**	Male	FUNDI
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**008**	**034**	Male	FARM BOY
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**008**	**124**	Male	BODABODA
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**009**	**042**	Male	SECURITY GUARD
5245	MACHAKO	KINANIE	KOMAROCK "A"	**009**	**043**	Male	CASUALS

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5245	MACHAKOS	KINANIE	KOMAROCK "A"	**009**	**041**	Male	WATCHMAN
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**009**	**128**	Male	SECURITY GUARD
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**011**	**050**	Male	ENGINEER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**012**	**057**	Male	DRIVER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**012**	**051**	Male	DRIVER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**012**	**059**	Male	SHOPKEEPER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**015**	**063**	Male	CASUAL LABOURER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**018**	**066**	Male	BUSINESS
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**021**	**070**	Male	WATCHMAN
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**024**	**074**	Male	SPORTS OFFICER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**026**	**133**	Female	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**027**	**082**	Male	JUA KALI
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**027**	**081**	Male	SECURITY
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**030**	**085**	Male	CLEANER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**031**	**092**	Female	JUA KALI
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**031**	**094**	Female	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**031**	**090**	Male	JUA KALI
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**031**	**093**	Male	JUA KALI
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**033**	**104**	Male	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**033**	**103**	Male	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**033**	**105**	Male	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**033**	**114**	Male	CASUAL
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**034**	**117**	Female	Housewife
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**034**	**120**	Male	DRIVER
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**034**	**123**	Female	Casuals
5245	MACHAKOS	KINANIE	KOMAROCK "A"	**035**	**131**	Male	CASUALS
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**003**	**003**	Male	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**004**	**005**	Female	BUSINESS LADY SELLS CLOTHES
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**006**	**007**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**007**	**134**	Female	NOT KNOWN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**012**	**014**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**017**	Female	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**020**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**023**	Male	BUSINESSMAN

706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**026**	Male	DRIVER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**029**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**033**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**036**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**039**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**042**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**045**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**048**	Male	STUDENT
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**051**	Male	CASUAL WORKER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**015**	**055**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**067**	Male	MACHINE OPERATOR
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**070**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**073**	Female	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**076**	Male	MARKETING
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**079**	Male	STUDENT
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**083**	Male	DRIVER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**086**	Female	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**016**	**089**	Male	CASUAL WORKER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**018**	**092**	Male	TAXI DRIVER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**018**	**096**	Male	PASTOR
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**018**	**099**	Male	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**019**	**104**	Male	ACCOUNTANT
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**021**	**107**	Female	BUSINESSMAN
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**024**	**110**	Female	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**028**	**114**	Male	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**031**	**118**	Male	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**031**	**121**	Female	MPESA AGENT
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**031**	**124**	Male	DRIVER
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**034**	**136**	Female	BUSINESSLADY
706	NAIROBI	UMOJA	UMOJA 1 - CALTEX	**034**	**139**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**001**	**002**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**001**	**004**	Male	TEACHER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**002**	**006**	Male	INTERIOR DESIGNER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**002**	**009**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**003**	**013**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**003**	**016**	Male	CASUAL WORKER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**003**	**093**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**003**	**096**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**004**	**018**	Female	RETIRED
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**004**	**099**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**006**	**022**	Female	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**006**	**026**	Female	CASUAL WORKER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**006**	**029**	Male	CASUAL WORKER

726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**006**	**032**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**006**	**033**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**008**	**036**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**010**	**069**	Female	HOUSEWIFE
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**010**	**072**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**074**	Male	TECHNICIAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**149**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**129**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**132**	Female	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**135**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**011**	**138**	Male	SOFTWARE UPDATE
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**012**	**079**	Male	EVENT
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**012**	**082**	Female	SELF EMPLOYED
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**012**	**085**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**012**	**087**	Male	BUSINESSLADY
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**012**	**090**	Male	DRIVER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**101**	Male	ACCOUNTANT
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**104**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**107**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**110**	Male	ENGINEER
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**112**	Male	NURSE
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**115**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**119**	Male	NOT KNOWN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**122**	Male	BUSINESSMAN
726	NAIROBI	KASARANI	CIEKO SANTON 'B'	**014**	**125**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**001**	**087**	Female	HOUSEHELP
745	NAIROBI	SILANGA	UPPER DAMSITE	**003**	**003**	Female	CASUAL WORKER
745	NAIROBI	SILANGA	UPPER DAMSITE	**003**	**004**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**005**	**008**	Male	MASON
745	NAIROBI	SILANGA	UPPER DAMSITE	**005**	**010**	Female	BUSINESSLADY
745	NAIROBI	SILANGA	UPPER DAMSITE	**006**	**011**	Male	CASUAL WORKER
745	NAIROBI	SILANGA	UPPER DAMSITE	**006**	**012**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**007**	**016**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**007**	**018**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**007**	**035**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**007**	**036**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**020**	Female	BUSINESSLADY
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**024**	Male	BODABODA
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**025**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**027**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**031**	Female	BUSINESSLADY
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**033**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**082**	Female	CASUAL WORKER

745	NAIROBI	SILANGA	UPPER DAMSITE	**008**	**084**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**040**	Male	STUDENT
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**042**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**043**	Female	ATHLETE
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**047**	Male	CYBER
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**049**	Female	MASON
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**051**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**052**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**056**	Male	SECURICAL OFFICER
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**058**	Male	BUSINESSMAN
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**060**	Male	MASON
745	NAIROBI	SILANGA	UPPER DAMSITE	**009**	**061**	Male	MASON
745	NAIROBI	SILANGA	UPPER DAMSITE	**010**	**065**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**010**	**067**	Female	BUSINESSLADY
745	NAIROBI	SILANGA	UPPER DAMSITE	**010**	**068**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**010**	**070**	Male	TAILOR
745	NAIROBI	SILANGA	UPPER DAMSITE	**011**	**074**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**011**	**076**	Male	CARWASH
745	NAIROBI	SILANGA	UPPER DAMSITE	**011**	**077**	Male	JUA KALI
745	NAIROBI	SILANGA	UPPER DAMSITE	**011**	**079**	Male	HUMAN RESOURCE MANAGER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**001**	**005**	Male	LECTURER. JKUAT
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**001**	**006**	Female	NOT KNOWN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**002**	**011**	Male	BANKER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**002**	**014**	Female	RETIREE
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**003**	**120**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**003**	**123**	Male	COUNTY SECRETARY
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**003**	**126**	Male	CONTRACTOR
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**004**	**019**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**004**	**022**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**004**	**025**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**005**	**028**	Female	BANKER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**005**	**031**	Male	SELF-EMPLOYED
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**005**	**034**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**006**	**038**	Male	IT SPECIALIST
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**006**	**042**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**007**	**044**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**007**	**047**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**007**	**051**	Male	RETIREE

2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**008**	**055**	Male	COMMUNICATION DIRECTOR
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**008**	**128**	Female	NOT KNOWN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**009**	**060**	Male	NOT KNOWN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**009**	**064**	Female	BUSINESSLADY
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**009**	**067**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**010**	**070**	Male	BUSINESSLADY
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**010**	**072**	Female	PUBLIC RELATION OFFICER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**011**	**076**	Male	GRAPHIC DESIGN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**011**	**081**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**012**	**084**	Male	SELF EMPLOYED
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**012**	**087**	Female	HOUSE WIFE
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**013**	**093**	Male	BUSINESSMAN
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**013**	**095**	Female	ACCOUNTANT
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**013**	**098**	Female	NACC
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**014**	**105**	Male	ACCOUNTANT
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**015**	**108**	Male	MANANGER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**015**	**112**	Male	ASST COM KRA
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**015**	**115**	Male	BANKER
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**017**	**129**	Female	CID
2064	NAIROBI	NAIROBI WEST	NAIROBI WEST 'C'	**018**	**119**	Male	CLERGY
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**003**	Male	PLANT OPERATOR
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**006**	Male	CASUAL
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**009**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**013**	Female	MAKAA VENDOR
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**016**	Male	TEACHER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**020**	Male	ACCOUNTANT
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**023**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**026**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**031**	Male	BUSINESS MAN
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**034**	Female	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**001**	**038**	Female	VILLAGE ELDER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**041**	Female	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**044**	Female	BUSINESS
3384	NAIROBI	OFAFA	MARINGO	**002**	**048**	Female	TEACHER

		MARINGO	SHOPPING				
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**051**	Male	CASUAL
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**055**	Male	UNEMPLOYED
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**058**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**061**	Male	EMPLOYED
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**065**	Male	MECHANIC
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**067**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**073**	Female	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**002**	**142**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**003**	**078**	Female	SHOPKEEPER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**003**	**082**	Male	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**003**	**085**	Male	CASUAL AT COCA COLA
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**003**	**089**	Male	DRIVER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**003**	**093**	Male	CASUAL
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**004**	**097**	Female	CASHIER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**004**	**101**	Male	HARDWARE
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**006**	**104**	Male	MECHANIC
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**006**	**107**	Male	CASUAL
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**113**	Male	DRIVER
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**118**	Female	FOOD VENDOR
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**123**	Male	CASUAL
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**127**	Female	BUSINESS
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**130**	Male	JOURNALIST
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**134**	Male	SECRETARY
3384	NAIROBI	OFAFA MARINGO	MARINGO SHOPPING	**007**	**138**	Female	BUSINESS
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**008**	**003**	Male	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**013**	**006**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**014**	**009**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**015**	**012**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**015**	**014**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**015**	**017**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**015**	**020**	Male	CASUAL WORKER
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**015**	**109**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**024**	Female	TEACHER
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**027**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**030**	Female	HOUSE WIFE

3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**032**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**035**	Male	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**038**	Male	INSPECTOR
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**041**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**017**	**044**	Female	KU EMPLOYEE
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**018**	**112**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**019**	**048**	Male	CASUAL LABOURER
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**019**	**051**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**019**	**053**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**020**	**114**	Female	TEACHER
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**021**	**116**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**023**	**058**	Male	ARTIST
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**023**	**061**	Female	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**023**	**064**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**023**	**120**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**023**	**123**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**065**	Male	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**068**	Female	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**071**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**074**	Male	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**077**	Male	JUA KALI
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**025**	**125**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**027**	**081**	Female	BUSINESS LADY
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**027**	**083**	Male	CASUAL
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**028**	**086**	Male	BUSINESSMAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**028**	**089**	Male	BUSINESS MAN
3390	NAIROBI	GITHURAI	CENTRAL 'C'	**031**	**091**	Male	BUSINESS MAN
3397	NAIROBI	KASARANI	HUNTERS 'B'	**001**	**004**	Female	BUSINESS-clothes
3397	NAIROBI	KASARANI	HUNTERS 'B'	**001**	**010**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**001**	**014**	Male	DRIVER
3397	NAIROBI	KASARANI	HUNTERS 'B'	**001**	**111**		
3397	NAIROBI	KASARANI	HUNTERS 'B'	**002**	**018**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**002**	**021**	Male	kbc reporter
3397	NAIROBI	KASARANI	HUNTERS 'B'	**002**	**140**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**002**	**143**	Female	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**113**	Female	refusal
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**116**		
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**119**	Male	auditor
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**122**	Male	soldier
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**125**	Female	casual worker
3397	NAIROBI	KASARANI	HUNTERS 'B'	**003**	**128**	Female	operates an electrical shop
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**030**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**034**	Female	business

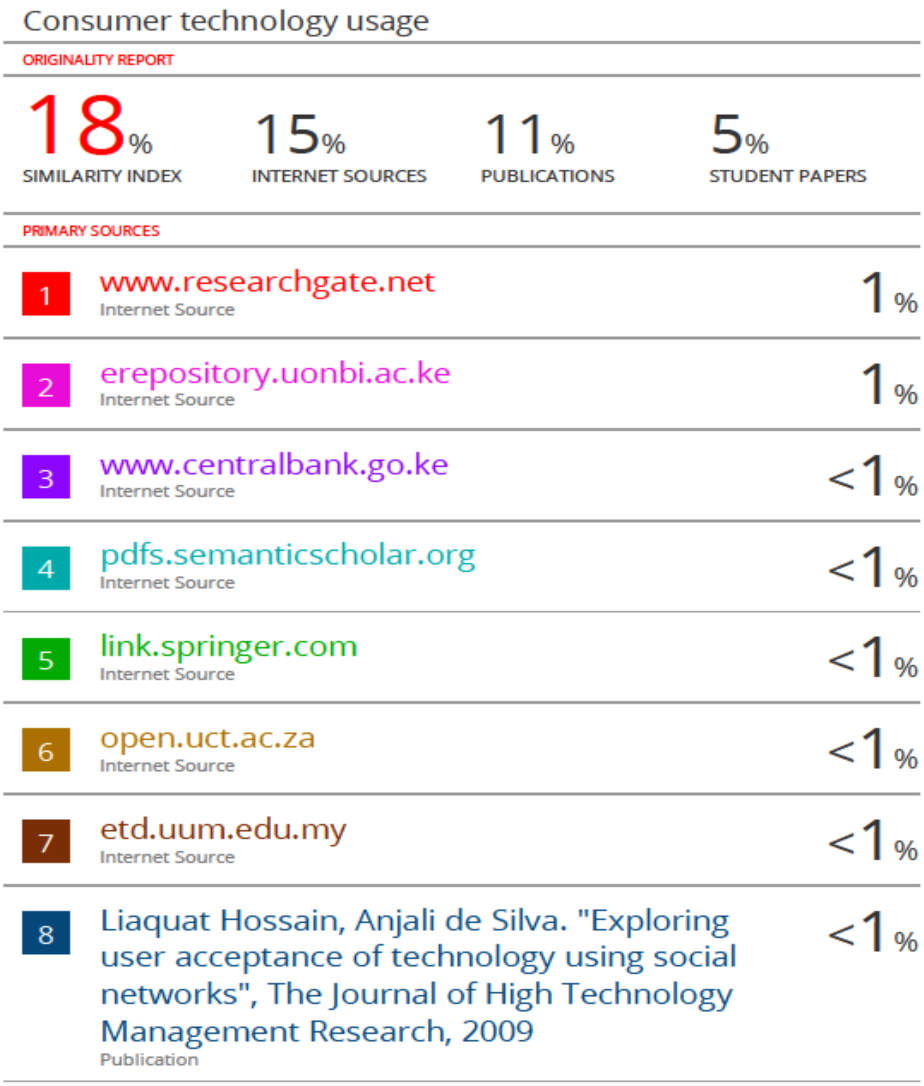
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**037**	Female	civil servant
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**040**	Male	police officer
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**043**	Male	police
3397	NAIROBI	KASARANI	HUNTERS 'B'	**004**	**046**	Female	salon
3397	NAIROBI	KASARANI	HUNTERS 'B'	**005**	**134**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**007**	**049**	Female	saloonist
3397	NAIROBI	KASARANI	HUNTERS 'B'	**007**	**052**	Female	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**007**	**055**	Male	driver
3397	NAIROBI	KASARANI	HUNTERS 'B'	**007**	**138**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**008**	**061**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**008**	**064**	Male	mechanic
3397	NAIROBI	KASARANI	HUNTERS 'B'	**009**	**073**	Male	caretaker
3397	NAIROBI	KASARANI	HUNTERS 'B'	**009**	**077**	Female	student
3397	NAIROBI	KASARANI	HUNTERS 'B'	**009**	**081**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**009**	**084**	Female	HOTEL ATTENDANT
3397	NAIROBI	KASARANI	HUNTERS 'B'	**009**	**088**	Male	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**010**	**091**	Female	CASHIER
3397	NAIROBI	KASARANI	HUNTERS 'B'	**010**	**095**	Female	business
3397	NAIROBI	KASARANI	HUNTERS 'B'	**010**	**098**	Female	HOTEL ATTENDANT
3397	NAIROBI	KASARANI	HUNTERS 'B'	**010**	**103**	Female	CIVIL SERVANT
3397	NAIROBI	KASARANI	HUNTERS 'B'	**010**	**106**	Male	BUSINESSMAN
3397	NAIROBI	KASARANI	HUNTERS 'B'	**011**	**110**	Male	DRIVER
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**001**	Male	JUA KALI
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**003**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**005**	Male	BUSINESS MAN
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**008**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**010**	Male	PLUMBER
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**013**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**015**	Male	CLEANER
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**017**	Male	SECURITY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**020**	Male	STUDENT
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**022**		JUAKALI
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**001**	**088**		
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**002**	**023**	Male	CASUAL LABOURER
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**002**	**090**	Female	BUSINESS LADY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**002**	**092**	Male	HOUSE BOY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**002**	**094**		
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**003**	**027**	Male	

3412	NAIROBI	KAWANGWARE	KANUNGAGA	**003**	**029**	Male	ELECTRICIAN
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**003**	**032**	Male	
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**034**	Male	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**037**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**039**	Female	MASON
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**041**	Male	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**044**	Female	BUSINESS LADY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**046**	Female	BUSINESS LADY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**004**	**098**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**005**	**047**	Male	CASUAL LABOURER
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**005**	**049**	Male	JUA KALI
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**005**	**052**	Female	BUSINESS LADY
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**005**	**101**	Male	SECURITY GUARD
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**006**	**055**	Male	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**006**	**057**	Male	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**008**	**059**	Female	HOUSE WIFE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**008**	**061**	Female	SALES REPRESENTATIVE
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**008**	**063**	Female	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**008**	**105**	Male	COOK
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**008**	**107**	Male	JUA KALI
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**010**	**109**	Male	CASUAL
3412	NAIROBI	KAWANGWARE	KANUNGAGA	**010**	**111**	Female	business lady
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**002**	**131**	Male	1
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**003**	**013**	Male	LABOURER
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**003**	**016**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**003**	**020**	Female	2
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**004**	**027**	Male	security
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**004**	**030**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**004**	**033**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**004**	**036**	Male	SECURICOR
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**004**	**133**	Male	business
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**007**	**049**	Female	house wife
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**008**	**052**	Male	LABOURER
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**008**	**055**	Female	none
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**008**	**058**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**008**	**061**	Male	MASON
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**009**	**067**	Male	MECHANIC

3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**009**	**070**	Male	business
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**009**	**074**	Male	painter
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**010**	**080**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**010**	**084**	Male	WATCHMAN
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**010**	**088**	Male	LABOURER
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**011**	**091**	Female	business
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**011**	**094**	Male	juakali
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**011**	**098**	Male	mason
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**012**	**104**	Male	MECHANIC
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**012**	**107**	Male	LABOURER
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**012**	**136**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**111**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**114**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**118**	Male	electrician
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**138**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**141**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**144**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**147**	Male	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**150**	Male	watchman
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**013**	**153**	Female	casual worker
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**014**	**121**	Male	LABOURER
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**014**	**124**	Male	tailor
3414	NAIROBI	LINDI	KISUMU NDOGO 'B'	**014**	**127**	Female	business
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**001**	Female	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**004**	Male	DRIVER
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**007**	Female	HOUSE WIFE
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**010**	Female	HOUSEWIFE
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**014**	Female	BUSINNESS LADY
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**017**	Male	FACTORY
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**020**	Female	BUSINESS LADY
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**023**	Male	BUSINESSMAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**026**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**029**	Female	HOUSE WIFE
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**032**	Male	MACHINE OPERATOR
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**035**	Female	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**001**	**039**	Female	HOUSE WIFE
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**042**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**045**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU	LUCKY SUMMER	**002**	**048**	Male	CASUAL

		KWA NJENGA	'B'				
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**051**	Female	HOUSE WIFE
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**054**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**057**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**060**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**064**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**067**	Female	SHOPKEEPER
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**070**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**073**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**076**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**002**	**079**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**082**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**086**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**089**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**092**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**095**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**098**	Male	SALES MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**101**	Male	CASUAL
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**104**	Male	SALESMAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**107**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**111**	Male	BUSINESS MAN
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**114**	Male	DRIVER
4798	NAIROBI	MUKURU KWA NJENGA	LUCKY SUMMER 'B'	**003**	**117**	Male	BUSINESS MAN

APPENDIX J: SIMILARITY INDEX



Consumer technology usage

ORIGINALITY REPORT

18%	15%	11%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.researchgate.net Internet Source	1%
2	erepository.uonbi.ac.ke Internet Source	1%
3	www.centralbank.go.ke Internet Source	<1%
4	pdfs.semanticscholar.org Internet Source	<1%
5	link.springer.com Internet Source	<1%
6	open.uct.ac.za Internet Source	<1%
7	etd.uum.edu.my Internet Source	<1%
8	Liaquat Hossain, Anjali de Silva. "Exploring user acceptance of technology using social networks", The Journal of High Technology Management Research, 2009 Publication	<1%