MODELLING THE EFFECT OF SELECTED FACTORS ON ADOPTION OF OVER-THE-TOP SERVICES IN KENYA

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature…… Date……

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This thesis has been submitted for examination with our approval as University Supervisors.

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DEDICATION

To my family, friends and all those who supported me while undertaking this course, God bless you abundantly.

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ABBREVIATIONS AND ACRONYMS

CA	Communications Authority of Kenya
CAGR	Compound Annual Growth Rate
GSM	Global System for Mobile communications
ITU	International Telecommunication Union
MTC	Mobile Telecommunications Limited
MTM	Market to Market
NN	Net Neutrality
OTT	Over-the-top content
PWC	PricewaterhouseCoopers Private Limited
SMEs	Small and medium size enterprise
TPB	Theory of Planned Behavior
TV	Television
US	United States

OPERATIONAL DEFINITION OF TERMS

OTT or "Over-the-top" refers to video content streamed through internet and not through broadcast or cable television. It includes subscription-based services, free, ad supported services and pay-to-watch streams offered by services including iTunes and Video on demand (Deloitte, 2017**).**

Over the Top Services: refers to conveyance of video, audio and other media contents over internet direct to the consumer without the involvement of a multiple -system operator (Prymak, 2017).

Perceived Ease of Use (PEOU): is the degree to which one believes that using a given technology, the effort required to do a particular task will be reduced or eliminated (Davis, 1989).

Perceived Usefulness: the extent one goes in believing that the usage of a given technology would boost the performance of his/her job or business (Abadi, Kabiry & Forghani, 2013)

Regulatory Environment: involves the legal and political forces that affect OTT adoption by posing threats or presenting opportunities on how OTT can be effectively controlled and adopted (Colesca & Dobrica, 2007).

Security and Privacy: Risk and uncertainties involved in a technology adoption (Ngugi, 2016).

ABSTRACT

The adoption rate of Viusasa application in Kenya has been perceived to be low. According to Communication Authority of Kenya (2019), the application had 23,076 active subscribers, a fall from 606,096 subscribers, who had initially signed up. As per the data, 583,020 were inactive subscribers. The biggest challenge facing Viusasa services are lack of free trial time, buffering, inadequacy in content availability, low loading time and crashes. The content of Viusasa cannot be accessed through a website; it is only accessible through Viusasa mobile application; this is not the case of other OTT players in the market. Thus, the general objective of this research was to develop a model for the impact of several factors on OTT adoption in Kenya. The specific objectives were: to determine the impact of individual, technological, organizational, and environmental aspects on OTT utilization in Kenya. This study employed a descriptive research technique. The target population for this study was limited to 23076 subscribers, who were the active subscribers of Viusasa as of December 2018. Simple random sampling was used to sample form the target population. Data collection was done through a structured questionnaire, which was both in soft and hard copy. Statistical package for social sciences (SPSS v25.0) was utilized to analyze the responses received from the questionnaire. The study generated and used averages, frequencies, and percentages to present the analysis. The findings revealed that individual factors, technological factors, organizational factors (users) and environmental factors (users) have a positive and significant relationship with the adoption of OTTs in Kenya. Pay TV providers and broadcasting stations that are providing or purpose to provide OTT services to focus on the key individual factors that lead to the adoption of OTT services. Based on the multiple regression findings, the null hypotheses were rejected since the P values were less than 0.05 and thus, there is a significant effect individual factors, technological factors, organizational factors and environmental factors on the adoption of OTT services in Kenya. The understanding assists the providers in improving their relationship with the users and have a bigger market even in terms of the customer base. Likewise, the communication regulators in Kenya such as Communications Authority of Kenya and the Media Council of Kenya are mandated to come up with media policies and programmes that uplift Kenyans through investing in quality local content.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the background to the study, statement of the problem, purpose of the study, research objectives and research hypothesis. Further, the chapter deals with the significance of the study as well as the limitations of the study.

1.2 Background of the Study

Via-the-top content (OTT) is the delivery of video, audio, and other media material to consumers directly online, without the use of a multiple-system administrator (Prymak, 2017). Media consumption in digital formats has increased dramatically over the world. Today's consumers have the freedom to access the media material of their choosing at any time and from any location. This has been made feasible by an increase in the number of devices that accommodate electronic channels, as well as faster internet speeds. Netflix, Hulu, Amazon, Apple TV, and other streaming services have begun to challenge conventional network's dominance (Deloitte, 2017).

Over the past few years, the evolution of OTT services has sparked a tremendous transition both in the telecommunications and broadcasting sector. The emergence of these services has led some cable companies who offered TV services including video-on demand (SVOD) subscription for media houses, to undergo a digital transformation, shifting focus to over-the-top TV services (PWC, 2015). The consideration by these companies to offer OTT services have been influenced by the stiff competition emerging from the OTT providers (Prymak, 2017). This competition has been propelled by blooming features of OTT services that draw the attention of many. Sujata *et al.* (2015) argues that OTT players have effectively leveraged features such as convenience, cost, content availability, social user experience and propensity and thus offering better substitutes to telcos offerings and Pay TV providers.

Although telecom operators and the Pay TV providers are in an unreceptive move to counter the challenge posed to them by the OTT players, they are well positioned to confront the players (Sujata *et al.,* 2015). An analysis of the individual, environmental and technological factors that are leading to the adoption of OTT services is expected to help the operators and Pay TV providers to remain relevant in the market. In addition, the service providers can opt to introduce their own OTT service. Such a move will lead the service providers to be in control of the consumer relationship and expand in terms of their market space and also have a wider base of customers. However, the expenses needed for such an approach are high and the investment is also a risky venture on the basis that it has not been done before (Sujata *et al.*, 2015). This study aimed to determine a model for the effect of selected factors on adoption of OTT services, which will work a long way in assisting Pay TV services providers, telecoms and other entities who want to venture into the market of OTT services.

1.1.1 Global Perspective of OTT Services

The US which is one of the wealthiest nations and single market, make it easier for key internet companies and online service providers to build domestic scale quickly (MTM, 2015). OTT subscription services and TV services that are conveyed over the internet are being adopted at a high rate in USA (MTM, 2015). In this country, OTT venture has grown so strongly over time, largely propelled by Hulu, Amazon, and Netflix. In 2014, the market of the OTT services had a worth of USD4b, which is a growth of 36 percent Compound Annual Growth Rate (CAGR) between 2011 and 2014. It is observed that by the close of the year 2014, 40.3% of the households in US who used TV were subscribed to at least a premium of the OTT service (Fluent, 2017). This growth of the OTT market has been propelled by; the highly developed broadband penetration at 77% in USA and the penetration of connected devices (Smartphone penetration at 75% and tablet penetration at 44% in 2014). The fact that the Pay-Tv services are expensive has also paved way for OTT players to lower prices on the demanded content and also offer the consumers free trials.

With the increasing diffusion of broadband, internet video viewers in China are increasing over time (Wan, Cenamor & Chen, 2017). At the end of June 2016, the country recorded 513.91 million online video viewers, an equivalent of 72.4% of its online population. Out of the 513.91 million online watchers, 85.7% of the viewers used smart phones to watch video content. The rich video content embedded in OTT services have drawn many people in china from traditional media. For example, Youku, a leading OTT player in China allows its consumers who serve as the audience to engage on the any content they watch or with their colleagues in the online platform of Youku. Other OTT service providers in China, like www.56.com and 6Rooms have developed online communities based on real-life videos created by people and on live online shows. The providers of these services are less content regulated compared to TV stations, which gives them a room to thrive. Despite the rapid growth of OTT services, the OTT players have not yet made profits; this is due to high costs of creation and scarce resources of revenues. The OTT players in China have to pay prices that are much higher for bandwidth compared to countries in the west (Huang, Shang, Lin, Li, & Tan, 2017).

The Indian entertainment and media sector is also growing at high rate. Globally, India is set to be in the top ten media markets by 2021 in terms of absolute numbers (PWC, 2018). As seen in the USA, that many viewers access paid video content through Netflix, In India, Hotstar as an OTT service provider spearheads in the market. Other top players comprise; SonyLIV, Voot, Netflix, Eros Now and Amazon Prime. Arre and YuppTV have also not been left out in offering OTT services in India. Indian shows are readily available on players like Hotstar at a free cost, a feature that draws many viewers to the platform. Smartphone penetration and enhanced functionality offered by OTT players are the two most major drivers of OTT growth in India (Sujata *et al.*, 2015). Voot and Hotstar have performed better compared to international players like Netflix and Amazon, basically because the local players offer services that are rich with Indian content. The Indian administration has also set import regulations for foreign OTT players that lack presence in India, a move that have led the players to adopt a model of setting up an intermediary in India with distribution rights for the Indian nation (PWC, 2018).

1.1.2 Regional Perspective of OTT Services

The development of international OTT players in African countries remains lower than in developed countries (Stork, *et al.,* 2017). For the international OTT players, developing countries are the major source of future growth; and with that regard they are investing in these continents directly. OTT players like Facebook and Netflix opened their offices in South Africa in 2015. Similarly, Vodacom also partnered with Naspers to offer the OTT services in the same country (South Africa, 2015). South Africa is the preferred point of entry for OTT players because the players identify other developing countries in Africa with lack in terms of developed telecom networks and a higher per capita Gross Domestic Product (GDP).

In Nigeria, about 87.37 percent of the 145 million people who have operational GSM connections use Fb alone, while more than 90 percent have their lines linked to WhatsApp (Global Stats, 2018). Because of the low cost of delivering digital information, people prefer the optimal benefits of using over-the-top services. Telecommunications employees have suffered a significant loss due to OTT applications, which function over telecommunications operators without limits or contracts. These providers have been unable to keep up with the rapid evolution of these OTT platforms (Nguyen, 2016). Similarly, regulators have opted to stay technologically neutral and not regulate over-the-top service providers in order to meet the same problem. As a result, cellular providers are being forced to be more inventive and integrate such solutions in order to remain competitive in the unpredictable growing market (Fowora, Awodele, Olayinka & Aduragbemi, 2018).

In Namibia, network operators have opted to use OTT services to increase or defend their market share. MTC which is an operator in Namibia offers the best OTT product (Stork, *et al.,* 2017). They have offered free Basics which have impacted positively in driving down retail prices and consumers now expect continued declines in prices. However, other small operators like TN Mobile have been threatened by these services, which have left them with the option of either bundling their services or developing their own applications that will offer OTT services (RIA, 2015). The approach of launching OTT applications is not uneasy task especially for

the low-income operators (Seixas, 2015). But with a well enhanced model the operators will be in a position to offer quality viewing experience to their consumers.

1.1.3 Local Perspective of OTT Services

In March 2016, the Communication Authority (CA) attributed the drop by 19.7% of short messaging services (SMS) in Kenya to the emergence of OTT service. Common OTT services that are dominant in the Kenyan market include WhatsApp, Facebook messenger, Skype and Viber. The penetration of internet and smart phone has favored the OTT services in Kenya, considering that most smart phones have applications that support OTT services (CA, 2016). Further, features such as convenience, social flexibility and cost reduction embedded in the OTT services has impelled the high uptake of these services in the Kenyan market (Sujata *et al.*, 2015). OTT communication services are expected to increase over time, which is a threat to the Kenya telcos revenue if they continue depending on the traditional services (CA, 2016). A decision by Kenyan telcos to develop their local applications that offer OTT services will help them to gain competitive advantage over OTTs players in Kenya (Sawe, 2015).

Kenyan media outlets are now reaching out to their large audiences using OTT channels including WhatsApp, Facebook, and Twitter. Realtime notifications of breaking news and other programming are given to end consumers on a daily basis via these networks via web hardware like smart TVs and Google TV (Yu, Hong & Hwang, 2016). These services have posed a great challenge to the Pay TV service providers such as Startimes, DSTV, AzamTV among others. Plans are under way by these providers to offer OTT services so that they can compete with the OTT players and remain relevant in the Kenyan market. OTT players like Netflix, YouTube and Viusasa have taken advantage of the high cost charged by Pay TV providers for their services through the introduction their services in the Kenyan market (Wangui, 2015).

Advertisers seem to have shifted focus to these OTT platforms such as the YouTube and Showmax, where local video production is readily available due to the rising online audiences including Kenyans in the diaspora who are not only accessing but

also consuming local TV drama and movies (Kirui & Mokua, 2017). The Kenyan people have embraced OTT services offered by international players. For example, Netflix is expected to have more than 29.5 thousand subscribers in Kenya in 2020 (Statista, 2019). Recently, Kenya has also launched an OTT player of its own referred to as Viusasa to offer similar services as offered by YouTube and Netflix (Wanjala, 2017). Some of the content in the Viusasa are; date news, society gossip, dramas, comedies, soaps, gospel, lifestyle and kids show.

1.1.4 Media Sector in Kenya

The media and communication industry are a diverse sector with various media technologies that have been created to reach millions of people with an aim of conveying a particular content that is informative or entertaining (Owuor, 2016). The industry is known to produce and offer diverse content through the use of different formats over computerized platforms. For example, the digital media is a platform that uses mediums like internet and phones to convey information to the intended users. On the other hand, broadcast media is a platform that utilizes mediums like recorded music, films, televisions and radios to transmit information to the audience. The media and communication industry in Kenya comprise of 4 international Pay TV providers, more than 90 FM stations, 15 TV stations, Telecommunication networks and OTT players (Owuor, 2016). The operators mainly use English and Kiswahili to deliver their content; however, some media houses use vernacular language (Deloitte, 2012 & PWC, 2013).

According to the Media Council of Kenya (2016), Kenya is one of the most vibrant markets in sub-Saharan Africa. Growth in population, rise in literacy levels, a growing middle class and technological advancement, have led to significant change in the entertainment and media market. The media industry has recorded incredible growth since the country achieved its independence in 1963. The industry started with the Kenya Broadcasting Corporation (KBC) as the only broadcasting station. Today the country has over 386 FM radio stations, and 105 TV stations (Kentra, 2016).

The government of Kenya has over time invested in this industry of information and telecommunication helping the sector to tune in to the technological advancement in the world. This has seen a radical transformation in the banking, broadcasting and telecommunication fields (Owuor, 2016). Today, cellular services infiltration stands at nearly 80% and telecommunication networks have more than 30 million subscribers registered in their databases. Over time the confidence by users to use technology to access the broadcasts content has grown and is still growing tremendously. Due to the frankness of the media industry in Kenya, international OTT players such as Netflix, YouTube and Amazon have paved in to meet this rising demand by users (Deloitte, 2012). Local network operators and Pay TV providers have also not been left behind in offering OTT services in Kenya. For instance, Showmax which is an OTT platform was recently introduced by Safaricom (network operator) and DSTV (Pay TV provider) to offer video content to users.

The telecommunication networks in Kenya namely; Safaricom, Airtel Kenya, Finserve Africa, Telcom Kenya and most recently Sema mobile services are responsible for supply of data to consumers and OTT players such as, Netflix, YouTube, Showmax and Viusasa (Okore, 2014). Telcos have an advantage over OTTs because OTTs depend on the telcos infrastructure to run their services. The broadcasting sector has groups such as; the Nation Media Group Limited (NMG), the Standard Group (SG), Royal Media Services (RMS) and Radio Africa Group (RAG). Even though the demand for online video content is high, so far only the Royal Media group has concentrated on electronic media and they have launched Viusasa as an OTT service provider.

1.2 Statement of the Problem

According to the second quarter sector statistics report of Communication Authority of Kenya (2019), Viusasa application had 23,076 active subscribers, a fall from 606,096 subscribers, who had initially signed up. The biggest challenge facing Viusasa services are lack of free trial time, buffering, inadequacy in content availability, low loading time and crashes among others (Chenze, 2018). The content of Viusasa cannot be accessed through a website; it is only accessible through the application; this is not the case of other OTT players in the market.

The competing players of Viusasa (Netflix and Showmax) offer a free trial to subscribers for half or one month before they can be charged (Chenze, 2018). In addition, subscribers of Viusasa have complained that the content they receive is a direct copy from Citizen TV and other media houses, arguing that it does not make sense to view content on Viusasa which they can get it somewhere else for free. Due to the poor-quality services of Viusasa, subscribers in Kenya prefer international OTT players that provide quality services such as YouTube and Netflix (Wenzel, Mahle & Pätzmann, 2016). This poses a great threat for Content Aggregation Limited (a subsidiary company of Royal Media Services) who are the financiers of Viusasa to lose revenues. This calls for a quick response of building up a model that will assist Content Aggregation Limited and other Pay TV providers that aspire to start successful OTT services so as to meet the rising demand by Kenyans of online applications for content view (Bhawan & Marg, 2015).

Several studies have been conducted on the OTT services on the media system. Kwizera *et al*. (2018) in their study in Rwanda revealed that the adoption of OTT messaging services was so fast and widespread but the study failed to focus on individual, technological and company factors that lead to the acceptance of OTT services; whereas Sujata's *et al.* (2015) study focused on the factors driving users towards OTT service, the study concluded that the determining driver of the growth of OTT services was regulatory and government position towards them, but the study failed to focus on a model that informs the adoption of the services. Further, Stork *et al.* (2017) studied the OTTs threat on African Telecommunication operators, the study established that OTTs can be embraced to retain revenues, however the study did not focus on a model that can be used to encourage the acceptance and use of the OTT services to increase the revenues; whereas Fowora *et al.* (2018) conducted a study on the impact of OTTs in Nigeria and established that the OTTs had low cost delivery prices that influenced consumers to adopt them, however the study was conducted in Nigeria and not in Kenya. The four studies failed to strictly focus on a model that can facilitate successful adoption of OTT services in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to develop a model for the effect of selected factors on adoption of OTTs in Kenya.

1.3.2 Specific Objectives

i. To establish the effect of individual factors on the adoption of OTT services in Kenya.
ii. To determine the effect of technological factors on the adoption of OTT services in Kenya.
iii. To examine the effect of organizational factors on the adoption of OTT services in Kenya.
iv. To establish the effect of environmental factors on the adoption of OTT services in Kenya.

1.4 Research Hypotheses

H_{01}: Individual factors do not have a statistically significant effect on the adoption of OTT services in Kenya.

H_{02}: Technological factors do not have a statistically significant effect on the adoption of OTT services in Kenya.

H_{03}: Organizational factors do not have a statistically significant effect on the adoption of OTT services in Kenya.

H_{04}: Environmental factors do not have a statistically significant effect on the adoption of OTT services in Kenya.

1.5 Significance of the Study

In years to come, the market of OTT services will greatly contribute to the revenues of network operators insofar as their present models of doing business are concerned. This has become a reality in some of the developed nations. Further, the rise in

demand for online video content is alarming and calls for appropriate measures by the relevant providers such as Pay TV providers and broadcasting stations to supply the required content to the viewers in Kenya. However, with the little knowledge that is available about the adoption models of OTT applications in developing countries like Kenya, this study was timely and will help various stakeholders in the media industry.

1.5.1 Broadcasting Stations

This study hypothesized that person characteristics, technological aspects, and contextual variables in OTT app design influence service acceptance. Hence, the results were of use to Pay TV providers and broadcasting stations that are providing or purpose to provide OTT services. It would also help Viusasa developers and other OTT players like Netflix, Showmax in understanding the Kenyan individual factors that lead to the adoption of OTT services. The understanding would assist the providers in improving their relationship with the users and have a bigger market even in terms of the customer base.

1.5.2 Telecommunications Operators

Telecom operators would also benefit from this study through the analysis that was obtained by this paper of consumer trends and the factors leading to the adoption of OTT services. The analysis would help them in service development because OTT services are creating huge data traffic (Sujata *et al*., 2015). The development of the adoption model in this paper would assist Kenyan telecom operators to successfully develop their own OTT services to gain a competitive advantage over the present OTTs players.

1.5.3 Policy Makers

This study would be essential to the communication legislators in Kenya such as CAK and the Media Council of Kenya who are mandated to oversee media and broadcasting services in Kenya. Individual perceptions and media views that will be captured in this study will help the legislators to formulate good policies that will promote peaceful cohesion between the media players.

1.5.4 Scholars and Researchers

Scholars will also utilize the outcomes of this research in carrying out more research as they attempt to fill the exploration gaps of this topic. The study will further help them to get the current facts of OTT services, which will reduce the existing gap of OTT literature in the context of Kenya.

1.6 Scope of the study

The study variables were; individual factors, environmental factors, organizational factors and technological factors and the adoption of OTT services in Kenya. The target population for this study were 23076 subscribers in Kenya, who were the active subscribers of Viusasa as at December 2018 (CAK, 2019). Viusasa as an OTT player was selected by this study for ease of data collection; it was also the leading and most advertised local OTT service in Kenya. The decision to adopt the service was guided by the number of videos downloaded or the amount of money spent on Viusasa or number of times a Viusasa subscriber uses the app in a week. This study was limited to Nairobi County in Kenya. The study was carried out in 2021.

1.7 Limitations of the Study

The study was limited to individual factors, environmental factors, organizational factors and technological factors and the adoption of OTT services in Kenya; that is VIUSASA. This narrows the focus of the study to one service provider and leaves other service providers in Kenya not surveyed. This poses a challenge of generalizability of the findings. However, by focusing on VIUSASA, this study presents a good background of adoption of OTT services in Kenya since it is a relatively new service provider in Kenya. Certain participants seemed likewise hesitant to disclose information required for the investigation for concern that it would be used to intimidate them or portray a negative picture of themselves. Our data collectors were not allowed to handle the telephones and the Viusasa employees were the ones to handle the process with the supervision of the chief executive officer. This was because of the ethics in the Viusasa customer service department where the questions needed to be asked in a professional manner bearing in mind the

etiquette on Viusasa. A non-disclosure agreement was signed by the data collectors and the Viusasa customer care department (under the supervision of the chief executive officer) as a way to ensure the confidentiality of the information collected from the customers for the pilot report.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents past literature in bid to present the line of hypothesis the study will choose. This is done by reviewing the relevant theories and the empirical literature based on the study objectives. Then the assertions are presented in a conceptual framework. Then the chapter critiques the empirical literature to present the research gaps.

2.2 Theoretical Review

Innovation adoption theory, Unified Theory of Acceptance and Use of Technology (UTAUT),Technology Acceptance Model, and Technology-Organization-Environment theory inspired this study. Over the last two decades, various adoption models have been influenced by the theories. Only a handful that are directly related to the research are included. The hypotheses' roots span several fields in sociology and psychology, outlining human actions in a social system when faced with the diffusion of technologies. They are commonly used by both inventors and entrepreneurs to forecast the acceptance and application of development by a particular audience. They are a useful source of information for understanding, interpreting, and forecasting corporate conduct in the context of ICT adoption.

2.2.1 Diffusion of Innovations Theory

The Diffusion of Innovations theory was initialized by Rogers (1995). DOI studies the steps that a modern technical discovery goes through to gain market acceptability across time and across societies. It aims to understand how, why, and how frequently new technology gets known and spread across cultures across time. When it comes to corporate innovation, the DOI observed that personal qualities, internal elements of a corporate design, and outward characteristics of a corporation are all important

(Roger, 2003). These factors may affect the adoption rate of OTT applications and systems at the firm level.

Diffusion can be defined as the means through which an innovation is conversed to people in the community over time (Rogers, 1995). Thus, the theory of diffusion explains the concept of diffusion in detail; it is one of the models utilized in explaining adoption of new technology in the field of IS. Individual attributes, internal elements of a firm structure, and the company's exterior features were discovered to be major antecedents in terms of the company's innovativeness (Tiago & Maria, 2011).

Nripendra et al. (2013), argues that the frequency of diffusion is determined by a relative merit of an innovation, its complexity, trialability, compatibility, and its observability. However, out of the constructs only three were found to be used across different studies, that is, compatibility, complexity, and relative merit. The degree to which a discovery is thought to be more significant or superior than its precursor is referred to as its comparative privilege. Compatibility refers to the extent a technology is seen to match perfectly with the existing beliefs, values, cultures and the requirements of the society. Complexity can be defined as the extent an individual sees a technology to be difficult to use and apprehend. Trialability is the extent to which a scheme or plan can be experimented on a limited basis and observability can be defined as the extent to which the results of an innovation are visible.

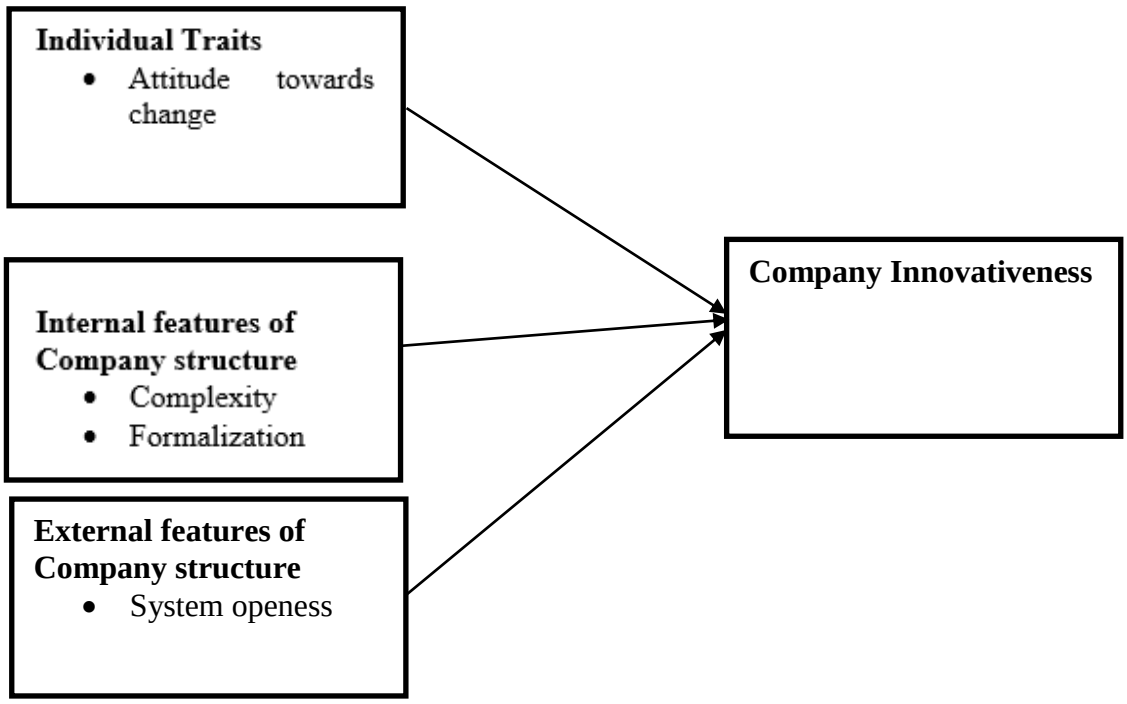

Figure 2.1: DOI theory as applied by Rogers,1995 to company's level

Source: Rogers (1995)

The theory of diffusion of innovation is commonly utilized to increase the speed of adoption of public health programs that are established to change the conduct of a social framework. For example, a problem in the public health can be solved through an intervention that is introduced to the community through a social system with the main aim that people are going to adopt it. For this reason, the theory has been used to inform the adoption of VIUSASA in Kenya by assessing its complexity, trialability, compatibility, and its observability.

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT is among the newest theory that is being embraced to predict and explain usage intention (Schaupp, Carter & McBride, 2010). UTAUT which was initialized in 2003, stands today as the leading and widespread theory in literature in the field of IS (Schaupp, Carter & McBride, 2010). The components in UTAUT have made it possible for the model to be used in the adoption of different technologies, like picture archiving, internet banking, mobile internet, communication systems and information kiosk and so forth.

Most studies in IT adoption employ UTAUT theory for the reason that it is a unified model; it is a result of integration of eight theories. With respect to this fact the UTAUT theory can be used in the place of the other eight adoption theories to a great extent. A study by Muhammad and Jouni (2013) reveal that factor such as, facilitating conditions, performance expectancy, effort expectancy and social influence affect the adoption of an application, with regard to UTAUT theory in Pakistan.

The model is very instrumental to the study since it lays a foundation on which companies and individuals can appreciate innovation. It is from these backgrounds that the theory offers a basis for Viusasa can invest in considering the effects of performance expectancy, effort expectancy, social influence and facilitating conditions in the adoption of the application. This theory informed this study through its constructs that contribute to the adoption of IT systems, though the same constructs are captured in other adoption models.

2.2.3 Technology Acceptance Model (TAM)

TAM is also a theory that contributes to the aspect of adoption in the IT industry (Awa, Eze, Urieto & Inyang, 2011; Benbasat & Barki, 2007; Silva, 2007). Davis (1989) who initialized the TAM asserts that this model is the only model that has widely captured the Information Systems community. TAM looks at perceived usefulness, perceived ease of use and attitude of the consumers, as individual traits that guides the adoption of an application.

TAM by Davis (1989) is mostly utilized in investigating on how user accepts to use a technology. TAM model focuses on the perception's individuals have towards a technology as opposed to the real usage, the theory argues that two key facets influence their decision of how and when they will use the technology (Davis, 1989). The two sides or features are perceived usefulness and perceived ease of use, which impact one's attitude toward using a certain system, which extends to influence behavioral intent to use a system, and eventually decides actual system utilization. Davis defines Perceived use as the extent to which one feels that utilizing a particular technique would improve the performance of his/her work or business, and PEOU as the degree to which one believes that using a particular technology will minimize or remove the effort necessary to complete a specific activity (Davis, 1989).

Literature posits that perceived ease of use dictates perceived usefulness, with the argument that the more a system is easier to use the more it can become more useful. Both the constructs portray the user's subjective evaluation of the system, which may or not match the real object constructs reflect. The acceptance of any system may be difficult especially when the users perceive that the system is hard to use and further it is not that useful (Davis, 1989). Environment as a demographic variable also serves as a stimulus of PU and PEOU. Therefore, TAM model is fully founded on the perceptive factors, that is, perceived usefulness and perceived ease of use. An example of a study by to Mohammad (2009) clearly show that TAM is widely applied on the research of information technology studies. Mohammad (2009) noted that TAM is an essential model for predicting and explaining the usage of a system.

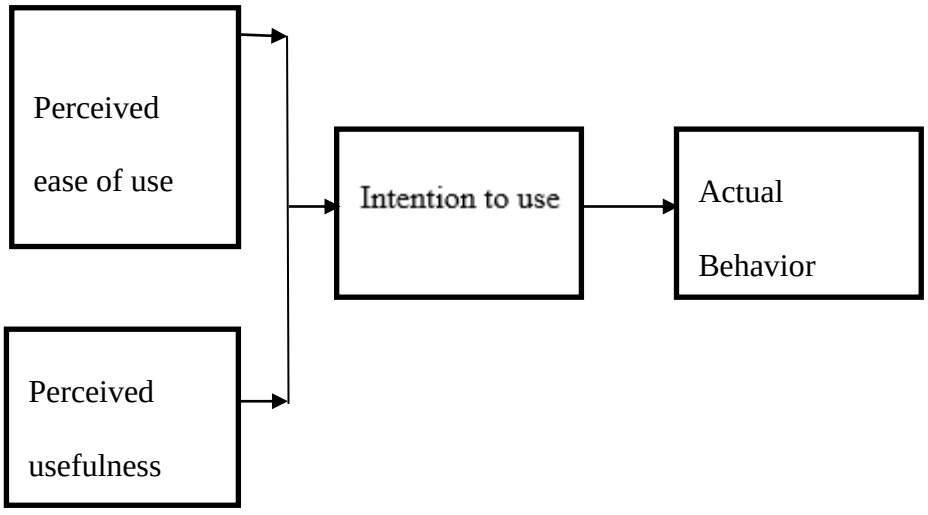

Figure 2.2: Technology Acceptance Model (TAM 1)

Source: Davis (1989)

As the main intention of TAM model is to explain or influence the user's behavioral intention towards use of a technological innovation, it makes the model very relevant to this study as it sets an environment that helps the acceptance of learning and adaptation of innovative culture towards the usage of VIUSASA.

2.2.4 TOE (Technology-Organization-Environment) Model

The theory of Technology-Organization-Environment- TOE identifies three facets of a project's context, as the determinants and propellers, in the adoption and implementation of a technological innovation (Tornatzky & Fleischer, 1990). The framework identifies that the process of adopting and executing a technological innovation is guided by environmental background, company's background, and technological background. They range from technology advancement (Kauffman & Walden, 2001), a company's dynamic ability, a company's aggressiveness (Chatterjee, Grewal & Sambamurthy, 2002), and the state of the industry (Kowath & Choon, 2001). DOI model established that individual traits, internal and external features of a company are the main drivers of innovativeness in that particular company. Nevertheless, the TOE model adds a unique construct, that is, environmental background. The environmental background majors on the opportunities and constraints for technological innovation.

Whereby, the present practices and the tools apparently being used by the firm are considered to be internal technologies (Starbuck, 1976), while else any technology administered outside the company but is being used by the company is considered to be an external technology (Thompson, 1967; Hage, 1980). Company's background involves the business scope of the firm, senior management support, executive culture, composite of the managerial structure which is weighed on the basis of formalization, vertical differentiation and centralization, and, the competence or professionalism of the human resource, and firm size such as inner slack assets and

specialty (Jeyaraj et al., 2006). According to Tornatzky and Fleischer (1990) the context, environmental background refers to; the industry in which the company is grouped in, competitors, and the relationships or interactions the company have with the government. TOE was used by Hart (2012) to inform his study on IT adoption at the firm level. Similarly, Lippert and Govindarajulu (2006) used TOE constructs on his study on web services adoption; they noted that scholars used the TOE model to serve as a theory that informed the investigation on the acceptance of new technologies (Gibbs & Kraemer, 2004; Zhu & Kraemer, 2005).

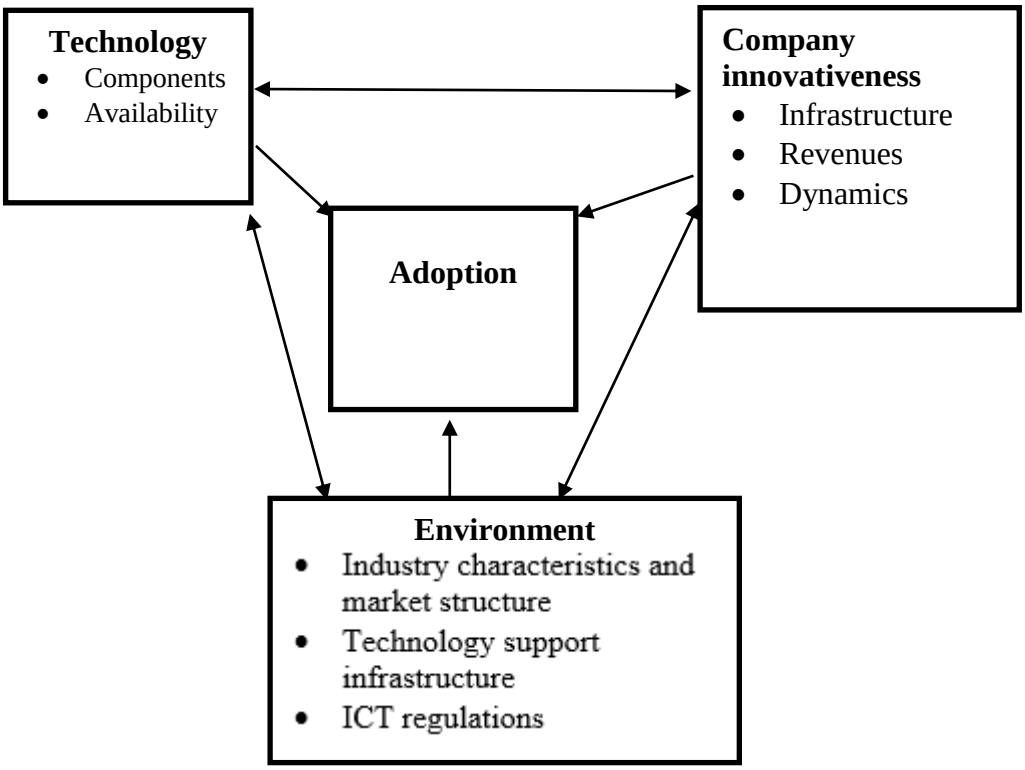

Figure 2.3: T-O-E model

Source: Tiago and Maria (2011)

At firm level the model is instrumental in the present study since it lay foundation on which to premise the influence of technological innovation (technological, organizational and external environmental context) on the adoption of VIUSASA.

On this background, TOE model informed this study because OTT services supported through an application are new and evolving innovations.

2.2.5 Theoretical Models and their comparisons

DOI which was initialized by Rodger (1995) stands second in position to be utilized in adoption of technologies studies as far as theories of adoption are concerned, however so far only three of its constructs are utilized in guiding the adoption for any new technology, they are; complexity, compatibility, and relative merit (Nripendra *et al*., 2013). Following the outcomes of Rodger's work several studies have been done on IT acceptance and adoption (Dwivedi & Irani, 2009). Fichman (2000) considers the Rogers' diffusion model as a model with a profound role in that it shapes the basic terms and concepts, scope of the field, but it does no capture all the innovation entailing adoption. While lenders are often seen as initial users, several examples have revealed them to be late adopters, as seen when lenders chose to keep antiquated technologies.

Diffusion of Innovation Theory is limited to some extent, whereby, it does not promote participatory approach as regards the adoption of health programs, in addition the theory is better in explaining behaviors of adoption compared to termination or mitigation of the behaviors, further the theory does not acknowledge the resources or social support an individual has and receives in the process of adopting a new innovation or system (Davis, 2009). Christina and Donald (2004) established that TOE is the most favorable model to use in the technology assimilation. Assimilation is the degree to which a technology spreads within a society. TOE is the only model that emphasizes on behavioral and social aspects and at the same time acknowledges the interchange of technology evolvement and surrounding conditions in the company that are dictated by the environmental circumstances (Hossain & Quaddus, 2011).

Despite the rigorousness of the model, UTAUT has some theoretical and methodological limitations that were not addressed. UTAUT faced critique with regards to its inability to explain behavioural intention in different settings. Limited external validity of the model motivated further studies to extend the model by

adding additional determinants of behaviour, such as trust, self-efficacy, computer self-efficacy, innovativeness, perceived threats, perceived risk (Slade et al., 2015). Also, the model was extended by introducing new moderating effects, such as income, location, culture, technology readiness (Borrero et al., 2014; Venkatesh, Thong & Xu, 2016)). Still, some key factors, like computer self-efficacy, remained under-researched. Although it was confirmed that this factor plays a role in behavioural intention (Bandura & Locke, 2003), only an indirect effect of self-efficacy on intention was tested while developing UTAUT (Venkatesh et al., 2003).

The technology acceptance model (TAM) is noted to be one of the most used models in the field of adoption (Lai, 2017). From the time TAM was initialized and to its revision, the theory has been utilized widely in various technologies. Yousafzai, Foxall, and Pallister (2007) through a study which they used a meta-analysis approach it was found out that TAM was used to explain the adoption of a variety of technologies, such as subscription services and online services. Willis (2008), through his study on TAM model with diverse populations and technologies established that TAM model was stronger compared to other models in explaining the behavior at work. The model has also been used to explain and predict the acceptance of specialized technology. For instance, TAM was used to study the acceptance of the boom, which is a mobile technology (Balavivekanandhan & Arulchelvan, 2015).

TAM is parsimony model. A parsimony model is one that achieves a certain level of prediction in explaining a phenomenon with the use of various variables (Vandekerckhove, Matzke & Wagenmakers, 2015). This implies that the intents of using a technology influence the usage behavior while else the PU and PEOU influence the intentions to use a technology. This component of TAM enables it to stand out when compared to other models. Significantly in many studies, TAM has emerged as the leading model in terms of explained variance, thus outperforming other models such as TRA and the TPB model (e.g., Davis *et al*., 2009; Fedorko, Bacik & Gavurova, 2018). TAM has some limitations in that it lacks a way in which it can identify the determinants of PU and PEOU, plus other backgrounds for making decisions. Further, it neglects group and the social aspects that aid or assist in

decision making, the dependence on over-simplified notions and naïve, and finally it relies so much on a purely deterministic system without considering the self-regulation procedures (Schlag & Imhof, 2017).

According to Hemlata Gangwar, Hema Date and Raoot (2014), TAM models are associated with insignificance, its predictive and explanatory capacity is limited, and its little practical value.. Furthermore, researchers have caused more confusion as regards the model in their attempt to improve the model to cope with the changing and evolving environment of technology (Durodolu, 2016). On this regard scholars like Dilogini and Shivany (2016) have incorporated technology readiness to serve as a precursor of PU and PEOU in the application of TAM. Both PU and PEU has proved to be reliable and valid constructs in the use of TAM (Isaac et al, 2016). The model has received extensive support over time, receiving validation in various information systems.

The supporters of TAM argue that PEU leads to PU and both of them envisage attitudes (Davis, 1993). Even though TAM has been approved empirically, applied and replicated (Ward, 2013), the model does not explain much on user's views regarding the adoption of particular systems by slicing its general constructs to only two, that is, PU and PEOU. Thus, there is a need to develop a model or else integrate different adoption models. Tornatzky and Fleischer (1990), TOE framework (bunches factors affecting innovation reception and use at the firm level into three expansive spaces of; Technology; inner and outer advancements applicable to the firm; factors, for example, methodology, structure, size and so on, climate; association's position in its industry, rivalry, guidelines and so on.

The TOE has been used widely in evaluating matters, adoption, execution and usage of technological innovations (Zhu *et al.*, 2003). For example, it has been used extensively in IT adoption studies (Hart, 2012). Susan *et al*. (2006) acknowledges that the TOE model has served as a theoretical foundation for most empirical studies focusing on adoption of technologies. The framework of TOE model is well grounded in terms of theoretical basis, extensive and steady empirical support and the capacity of fitting in IS domains, however it should be noted that specific facets identified within the three contexts may differ from one study to another. Although

TOE has been supported by some scholars, Oduor (2016) criticizes the theory by stating that it is just a taxonomy for variable categorization which lacks a well framed conceptual map, he contends that this model isn't very much evolved. By the by, it considers most factors important at the firm level where development reception is concerned.

A few examinations have consolidated TAM determinants with TOE for example Hart et al. (2012) in their examination, "Coordinating TAM and TOE Frameworks for E-Commerce Adoption." This joining gives more extravagant hypothetical focal points to the comprehension of reception conduct. TOE neglected to address the singular qualities; on this foundation it is of significance to broaden the T-O-E with different builds that are pertinent to OTT administrations improvement to infer the proposed model. Cap on own needs adequate thoroughness and importance would make it a grounded hypothesis for the OTT application improvement.

It very well may be reasoned from the survey of current hypotheses and models around innovation reception that there is nobody model that fits all situations of individual or potentially hierarchical settings of reception. New models are generally enhancements for prior models addressing weaknesses to fit explicit situations. Rui (2007) noted that a comprehensive knowledge of the behavior of application adoption in companies is lacking and even the existing structures are limited in terms of providing impactful set of drivers that can aid researcher in IS in developing a parsimonious but effective model in the adoption of IS technologies. The social order behaviors towards technology adoption have changed over this period. Therefore, a new model was essential to guide the adoption of OTT services in the current era.

An integration of the theories and models used above will form the basis of this research, since all the constructs of each of the models may have a contributory effect in the adoption of OTT services. Other constructs such as developer’s industrial capability and the developing setting, were incorporated in the new model. Designer's modern ability is the general watcher/shopper fulfillment with OTT administrations as far as content, security, interface, quality and speed (Colesca & Dobrica, 2008). The development setting is crucial in the construction of a technology because different settings mean different use of tools. To understand this,

M-pesa is one of technological software which was initialized in Kenya but developed in UK, the fact that the mobile technology was developed in UK increases the confidence level of Kenyans to use it because they believe the UK are advanced in their tools of use. This means that if the technology was fully initialized and developed in Kenya, the confidence level of Kenyans in using the technology would not be very high. The added constructs improved the existing models TAM and T-O-E which in turn improved the explanatory and predictive lenses of technology adoption. The integration of TAM, TOE, DOI and the two constructs will help us to develop a new model that will be used to develop OTT services applications like Viusasa.

2.3 Conceptual Framework

The conceptual framework depicts the relationship between the general model factors (communications technology, specific firm, and contextual variables) and parameters, as well as their influence on OTT uptake. A theoretical model is a chart that represents the relationship between the predicted and predictor variables (Mugenda & Mugenda, 2003). The adoption of OTTs was the study's dependent variable. It was calculated based on the amount of subscription packages purchased by viewers or sold by developers. Independent factors include the developer's industrial aptitude, perceived utility, perceived simplicity of use, security and privacy, compatibility, regulatory environment, and the development context.

The latest model was inspired by previous models and investigated citizens' demand for Viusasa-provided material, as well as examining various variables that might influence citizens' use of OTTs service development. The proposed research model included TOE, TAM, and DOI. This study included two characteristics to the combined framework of three models, namely development industrial competence and development setting, which implies that the two characteristics were added to the constructs in the TOE, TAM, and DOI models. The new model aided in understanding the impact of social-economic and technological aspects on OTT uptake in Kenya.

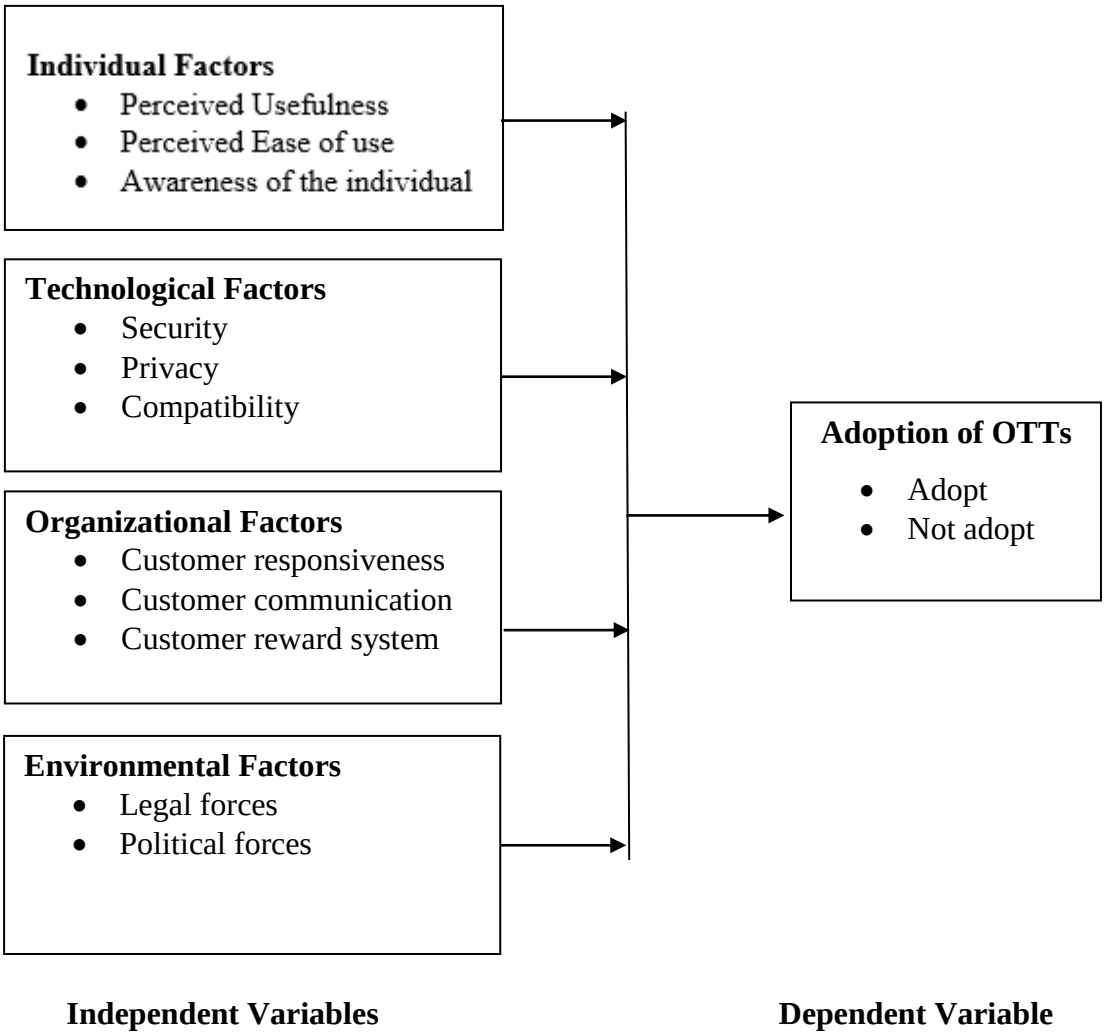

Figure 2.4: Conceptual Framework

2.3.1 Individual Factors

Individual factors as revealed by Mbachu and Bizien (2017) are essential in the prediction and act as a driving force of adoption of any technological innovations. From the results of several studies that have been conducted factors such as past experience, personal innovativeness, perceived usefulness, attitude, image and delight in an innovation have a great influence in the adoption of a technology to a great extent in the adoption of a technology (Davis, 1989; Wilson et al., 2021). In the adoption of a technology perceived usefulness proves to be one of the strongest

predictors and it remains constant in terms of significance whenever it is measured (Chen & Aklikokou, 2020). Moslehpour et al. (2018) define perceived usefulness as the extent one goes in believing that the use of a particular technology would boost the performance of his/her job or business. It is assumed that Perceived ease of use (PEOU) positively influence perceived ease of use. PEOU is the extent one goes in believing that using a particular technology, the effort required to do a particular task will be reduced or eliminated (Davis, 1989). The two individual factors are simultaneously influenced by an external factor (Grover et al., 2019).

In this regard the usage of any application like Viusasa is connected to the perception of customers about the application, such that, if the customers regard the application to be inadequate then it cannot be used effectively. The reason why the two factors are considered worthy to be used in this study is because they are constructs founded on the perceptions of the people who are targeted by developers as the potential customers. Perceptions differ from one individual to the next, such that, one may find it easy to use a particular technology while another may find it hard to use the same technology.

In addition, the distributer’s industrial capacity should be considered as a factor that may contribute to the rate of adoption of a technological service. For instance, the industrial capability of Content Aggregation Limited, who is the pioneer of Viusasa can be considered to be essential to the successful adoption of Viusasa. The capacity involves the aggressiveness, risk taking nature and how the company is dynamic in the market. The risk-taking attitude of the corporation behind the technology suggests that he/she engages in study layout and is likely to launch as many OTT app versions as possible. Furthermore, a designer's competitive strategy means that he or she promotes aggressively, which has a predictive influence on client acceptance of the innovation. With the globalization of the world economy, industrial capacity is an important feature to look into (Liu & Dunford, 2016). This review embraced apparent helpfulness, seen usability and distributer's modern limit as the builds of individual elements.

2.3.2 Technological Factors

The technological elements involve both the outer and interior innovations that credits to the general efficiency of the organization. Bhattacharyya et al. (2022) envelop the current advances being used inside the organization and the applicable innovations the organization can remotely draw. Moseti (2019) refers to DOI hypothesis and incorporate similarity, relative legitimacy, trialability and intricacy, recognizability as mechanical elements impacting connected to innovation reception.

The Software Cost and Risk model was used in this study for it established the risks and costs that come by and by with the adoption of an application like Viusasa (Nazareth & Choi, 2015). Failure to tame and mitigate the possible risks of OTT applications may put OTT companies and developers at a hazardous position in the future (ITU, 2017). Studies argue that if customers relate or speculate a certain risk with an application then the application stands not to be adopted in the future and the rate of adoption also goes down. However, in attempt to increase the adoption of the technology firms assures the customers the various safety features that the company have been adopted for safe use of the application (Rono et al., 2022). Features like, encryption and authentication are example of safety measures that have been to curb risks in electronic commerce. Firms also get and establish proper legal frameworks and obtain certification from the mandated agencies like e-trust. Such an agency certifies an application to be trustworthy and secure.

Security is viewed as the most challenging issue facing customers who want to trade online (Ngugi, 2016). The internet is associated with a lot of vulnerabilities, whereby the trade conducted on the online platform is considered not safe because it can be accessed by a lot of people who visit the internet. The risks associated with these vulnerabilities can be categorized into different genres. They can be: physical; cognitive, this is the exertion required in the attempt of mastering a risky technology; affective, motivation and attitudes (trust, confidence and efficacy) associated with the use of a system; social, this are norms in the society; economical, these are profits and benefit expected or associated with the adoption; and political, this involves the power and information holes (Ngugi, 2016). This review embraced similarity, security and protection as the builds of mechanical elements

2.2.3 Environmental Factors

Mwambia (2015) reveal that environmental factors entail the setting of the arena in which a company conducts its business. A company is mainly influenced by its industry, competitors and regulations surrounding its operations (Susan *et al*., 2006). Environmental factors comprise of factors, for example, industry contest, client impact, contention and administrative consistence (Mwambia, 2015). The Software Skills and Risk Tolerance model lift the limit of an organization to deal with expected dangers in the endeavor of use or innovation reception and it delivers a danger resistance blueprint and structures. The connection among ability and involvement in esteem is straightforwardly corresponding, where the higher the expertise capability and the more prominent the experience an organization has with application advancement, the higher the planned worth of the application (Nazareth & Choi, 2015).

A higher skill set further minimizes the time for investment and the cost of using an application (Diomidis & Vaggelis, 2012). ICT training programs are directed on teaching students with skill in the most familiarly used proprietary software packages e.g., Microsoft and this has a repercussion in terms of the skill set available to OSS. This is aggravated by the reason that there are few certification problems to support the high demand of computer and technology personnel that want to pursue application related software (Urban & Greyling, 2015). The barriers that hinder successful adoption of applications is inadequacy in resources and external resources, incompatibility with individual skills and existing software. However, according to Onyango and Michael (2017), the developer skills can also be enhanced through an intellectual challenge that comes along with application development every time the developers are given the source code. This exploration work took on industry rivalry, Regulatory Environment and creating setting as the builds of natural elements.

2.3.4 Organization Factors

The organisation factors are characterized by measures such as infrastructure, size of the company and the availability of slack resources. Organisational factors are comprised of different elements. According to Atkin et al. (2017), large firms are

more likely to successfully take on an innovation, both because of the availability of funds and the foreseen benefits of the technology adoption. Those organizations whose market share is large are more likely to initiate a new technology because of the capacity they possess such that they are able to distribute the profits they receive from the adoption. Heavy investments in research, development, marketing, training, infrastructure and employment of workers come along with the invention and development of a new technology. And since profits grind down when competition is high then only companies with large market share would find it beneficial to take on a new technology (Atkin *et al.*, 2017)

The adequacy of resources required for initiating a new technology is an important factor to be considered in the adoption of any technology. The market structure of organisations providing a new technology is essential for the acceptance of the innovation. High technological infrastructure is also found to be useful. An investigation focusing on the adoption of mobile telephone in the European Union reveal that the impact of technological infrastructure is the most vital factor that helped in the transition from analog to digital technology (Atkin *et al.*, 2017). According to Huang *et al*. (2017), OTT players can fail to make profits due to high costs of creation and limited sources of revenues. This study adopted company's size, infrastructure and resources as the constructs of company factors.

2.4 Empirical Review

Awa, Ukoha and Emecheta (2016) study conducted to provide information on the adoption of enterprise resource planning (ERP) software SMEs, purposive and snowball sampling technique was used to select the sample to be used from executives of SMEs. It was established that TOE model is effective in explaining the adoption of ERP, only that technological factors were found to contribute more to the adoption of the software compared to environmental and company factors. Aljowaidi (2015) conducted a study on the factors that influence the adoption of e-commerce and its application in Saudi Arabian large retail firms. Constructivism qualitative design was used to explore the study. Interview guides were used to collect data from both the managers and executives of the firms. Inductive reasoning and thematic analysis were used to conducted data analysis. The study established that

enhancement of marketing, operational efficiency, and compatible shopping environment. The rate of implementation of e-commerce was realized to be low due to factors such as; inadequate government initiatives, legislative systems, lack of e-payment ways, poor infrastructure, insufficient external ICT infrastructure, and low e-readiness among local trade associates.

Gangwar (2016) in his study integrated both TAM-TOE model to predict the adoption of cloud computing. An empirical review was conducted utilizing 280 IT companies in India. Confirmatory and exploratory factor analysis was used. A structural equation model was also used as well as AMOS software to test the new model. Third party and security concern were established to be prominent factors driving the adoption of cloud computing through PE and PEOU. According to Hussein, Mohamed, Ahlan, Mahmud and Aditiawarman (2010) some of the barriers facing the adoption of Online Tax System in Malaysia are; deficiency in technical skills by the users and their lack of trust in the system. As a result, the authors conducted a study by combining DOI constructs, perceived characteristics of innovating theory and the constructs for TAM model. In addition, other constructs were added such as; web-based service quality, social influence, internet trust, trusts of the government political self-efficacy, and perceived risk. The results revealed that trust in government and web service were significant elements in the adoption of the e-filling system.

Wangari (2019) studied the factors affecting the adoption of e-commerce in Thika Town. As guided by the guided by the Diffusion of Innovation Theory and Technology Acceptance Model, the findings indicate that e-commerce has a relatively slow adoption rate among consumers. Consumers' trust was established as a critical factor in the adoption of e-commerce due to the high levels of uncertainty and risks involved in virtual transactions.

Okoro (2021) used a descriptive research design to study the factors affecting adoption of modern technology by telecommunication firms in Kenya. Correlation analysis results show that technological factors had a statistically significant relationship with adoption of modern technology. The findings further indicate that individual factors have a statistically significant association with the adoption of

modern technology. In terms of the third objective, results shows that organizational factors have a statistically significant relationship with the adoption of modern technology.

Lee et al. (2021) examined the factors influencing early paid over-the-top video streaming market growth. The results of the panel data analysis suggest that Netflix's market entry, traditional pay TV market size, broadband infrastructure, and OTT platform competition contribute to the early market growth of paid OTT video streaming services, such as subscription video-on-demand services. The results also reveal that the traditional pay TV subscription market and the paid OTT video streaming market initially grow together in many countries. However, the findings also reveal a negative association between the market entry of Netflix and the subscription revenue growth rate of traditional pay TV services.

Yoo et al. (2017) investigated the factors affecting the adoption of gamified smart tourism applications. The result showed that hedonic characteristics of the gamified smart tourism application are strong in adoption. Perceived enjoyment had a significant influence on the intention to use, but information quality, related to cognitive experience, did not. The flow and perceived distributive justice associated with the game content were not significant, but the interaction motivation was significant. The results of this study show that individuals regard a GSTA as a low-level game tool.

Muia (2021) analyzed the factors influencing the integration of ICT in teaching and learning in public primary schools in Kitui Central Sub County. The study was anchored on the Technological Pedagogical Content Knowledge Model and the Technology Acceptance Model. From the descriptive survey research design on 70 head teachers and 1053 teachers from 70 public primary schools, it was indicated that teachers' ICT literacy was the most potent predictor of ICT integration.

2.5 Critique of the existing literature

Troshani (2011) in his study adopted a technology-organization-environment model for analytical framework. He established management capability and

management commitment and environmental factors as constructs leading to the adoption of HRIS but this study fails to investigate other TOE constructs such as compatibility and industrial competition which the current study will focus on. Ahmad *et al*. (2011) on his study on the usage of computer-mediated technology, he focused on limited types of constructs that is, perceived usefulness, self-efficacy, intention to use and self-reported usage and leaves out other views by the user such as attitude towards change, which was studied in this study.

Hussein *et al*. (2010) uses DOI constructs, perceived characteristics of innovating theory and the constructs for TAM model as determinants of adoption of e-filling system; however, this study focused only on the government systems leaving out other adoption systems like the case of our study which focuses on OTT systems. Tiago and Maria (2011), on their study on firms' patterns of e-Business Adoption, they established that most important constructs for e-business adoption was the type of industry and its characteristics, however this conclusion cannot be made for other industries because the environmental, technological and company constructs for industries differ from one to another.

2.6 Research Gaps

From the literature reviewed it is thus, found that the model discussed do not fit all situations of individual or potentially authoritative settings of reception. New models are for the most part enhancements for prior models addressing inadequacies to fit explicit situations. Rui (2007) noticed that an extensive information on the conduct of use reception in organizations is missing and surprisingly the current constructions are restricted as far as giving significant arrangement of drivers that can help scientist in IS in fostering a closefisted however compelling model in the reception of IS innovations. The vast majority of the current speculations/models were created north of twenty years. The social request practices towards innovation reception have changed over this period. In this manner, another model was crucial for guide the reception of OTT administrations in the current time.

Tiago and Maria (2011), on their study on firms' patterns of e-Business Adoption used EU27 members, that means that the study focused on the whole of Europe, leaving a contextual gap, which was filled by the current study which was conducted in Kenya. Troshani (2011) in his study only focuses on the adoption HRIS (Human resources information systems) in public sectors, a conceptual gap exists in Troshani study because he focused on adoption of HRIS whereas this study concentrated on the adoption of OTT services. Ukoha and Emecheta (2016) on their research work, the adoption of enterprise resource planning (ERP) they used snow ball and purposive sampling posing a methodological gap, this study filled the gap by using simple random sampling. Ahmad *et al*. (2011) on his study on the usage of computer-mediated technology mainly focused on public universities as their unit of analysis, the current study filled the conceptual gap by focusing on the media sector and in particular the OTT local industry.

2.7 Summary of the Literature Reviewed

The chapter specified the different theories and models which contain facets that helped in explaining both the predictor and dependent variables. This study used the following theories: diffusion of innovations theory, Unified Theory of Acceptance and Use of Technology (UTAUT), Technology Acceptance Model and Technology-Organization-Environment theory. The diffusion of innovations theory realized that individual traits, internal features of a company structure and the external features of a company were essential in innovative practices in the company. As for UTAUT theory, it predicted and explained the intention of the user to use a new technology. Further, Technology Acceptance Model (TAM) looked at perceived usefulness, perceived ease of use and attitude of the consumers, as individual traits that guides the adoption of an application. The theory of Technology-Organization-Environment established three aspects of a project context, which dictates the process of adopting and executing a technological innovation: environmental background, company's background, and technological background. Lastly, the chapter compared the models and made conclusions that guided in formation of the proposed model. The reviewed theories were then linked for relevance to specific variables.

The chapter drew findings from past studies regarding the variables of the study; this helped to show how the variables had been used in other studies forming the empirical review of the study. From the literature, it was clear that individual, technological and company factors had a significant effect on the adoption of technology. From the reviewed studies critiques were made and from the critiques research gaps were identified

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

While trying to decide a model for reception of OTTs in Kenya, this review utilized enlightening review approach that uncovered the basic connection between the elements that help or deflect the reception of the model. This part introduced the examination configuration, target populace, test size and test choice. It additionally examined the examination instruments, pilot review, dependability and legitimacy of instruments, methodology used to gather information, information investigation procedures and model adjustment and testing.

3.2 Research Design

This research used a descriptive research design. The purpose of a descriptive study is to produce information about the existence and state of research phenomena. Descriptive design is justified because it offers a foundation for doing qualitative and quantitative research work. It captures replicable data from practically any human community; hence this methodology was used to gather data from a sample group of the community, the results of which were used to reflect the number of individuals as a whole (Baker, 2017). Systematic gathering of knowledge requires careful selection, sampling and identification of the units to be analyzed and careful operationalization of each element (Dannels, 2018).

3.3 Target Population

The objective populace is valuable since it frames the premise of our exploration scope. The target population for this study was limited to 23076 subscribers, who were the active subscribers of Viusasa as at December 2018 (CA, 2022). The decision to adopt the service was guided by the number of videos downloaded or amount of money spent on Viusasa or number of times a Viusasa subscriber uses the app in a week.

3.4 Sample Size and Sampling Techniques

Berndt (2020) identify a sample as constitute of the total population, that is, a selection of units chosen from the universe to signify it. The sample size of this study was obtained from the target population of 23076 subscribers through the Fisher's formula. The sampling frame for this study were all the active subscribers of Viusasa obtained from the Content Aggregation Limited. The researcher wrote an introductory letter to the company requesting for the sampling frame. A sampling frame is a list of all subjects or entities in a population from which a sample is obtained (Saunders, Lewis and Thornhill, 2012).

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where:

n=the desired sample size (if the target population is greater than 10, 000)

z= the standard normal deviate set at1.96 normal distribution curve and corresponding to 95% confidence level.

q=1-p

d=the level of statistical significance set at 0.05

p= the proportion in the target population estimated to have characteristics being measured;

Substituted as in

$$n = \frac{(1.96)^2 (0.50)(0.50)}{(0.50)^2}$$

$$= 384$$

The sample size was therefore 384 subscribers of Viusasa. This sample was obtained through a simple random sampling method. The unit of observation for this study was the active subscriber of Viusasa, whereas the unit of analysis was the Content Aggregation Limited (Viusasa developer). Unit of analysis is the body that frames what is being analyzed (Neuendorf, 2016).

3.5 Data Collection Instruments

A structured questionnaire was used as the measurement tool, which was both in soft and hard copy. The researcher requested for a sampling contact list of randomly selected 384 subscribers of Viusasa. The researcher used a formal introduction letter to make the request and Viusasa (Content Aggregation Limited) was assured that the data they give will be treated with most extreme classification and utilized uniquely for scholastic purposes. A softcopy survey was utilized to gather information, by which it was managed by phone, email to suit respondents' decision. Every determinant of reception showed up as an autonomous variable and had things (questions), properties and ostensible qualities to operationalize it. The members reacted to each address on a Likert-type size of 1 to 5.

The questionnaire was structured in sections where section A contained items on personal information, section B, items on individual factors (perceived ease of use-users), section C, items on technological factors (security and privacy-users), section D, items on organizational factors (users), section E, items on environmental factors (users) and section F, items on Adoption of VIUSASA. The outlining of the inquiries was organized as to such an extent that issues of privacy were insignificant to the degree that members don't need to look for the board agree to react. Mysterious reactions were permitted.

3.6 Variable Definition and measurement

Table 3.1: Operationalization of the study variables

Models	Constructs	Used in developing New Model	Not used
DOI	**Individual Characteristics** • Attitude towards change • Internal Characteristics of a Company Structure • Centralization • Complexity • Organizational slack • Interconnectedness • Size **External Characteristics of Organizational** • System openness	Individual Traits • Attitude towards change Internal Characteristics of a company • Culture • Size • Resources	• Internal Characteristics of Organizational Structure • Centralization • Complexity
TAM	Perceived Usefulness and Perceived Ease of Use	• Perceived Usefulness • Perceived Ease of Use	
TOE	**Technological** • Content Availability • Characteristics **Environmental factors** • Industry characteristics and market structure • Technology support infrastructure • ICT regulation	**Technological** • Compatibility • Security • Privacy **Environmental factors** • Industry competition • Regulatory Environment • Development Setting **Individual factors** • Developer's industrial capability	**Organizational Factors** • Organization culture • Organization size • Organization Resources

3.7 Data Collection Procedure

Primary data was collected by use of structured questionnaires. The structured questionnaire is economical in as regards money and time, easy to administer and analyze. The questionnaires were in soft copy which were sent to the respondents via emails with an introduction letter attached from the researcher. A total of 384 questionnaires were administered. Research assistants aided in the follow up and later pick up the questionnaires.

3.8 Pilot Study

Prior to the actual use of the questionnaire during the data collection a pilot study should be collected. The test allows the people in the field with adequate information of the subject under study to review and evaluate if the questions on the questionnaire are sufficient to adequately address the variables under study. After the evaluation the researcher is able to make some improvements on the questionnaire. The pilot test helps in making sure that the questionnaire is clear to the respondents and that no difficulties are encountered during data recording. A preliminary analysis by utilizing the pilot test data can be done to make sure that the collected data will enable the questions under investigation to be answered (Saunders, Lewis & Thornhill, 2012). This study used 38 respondents of the total sample who are targeted by this study to conduct the pilot study, this number represent 10% of the total sample of this study. This decision to pick 38 respondents to conduct pilot study was guided by Mugenda and Mugenda (2011) who recommended a 1 to 10 percent figure of the actual sample size is fit for piloting. The pilot findings were used to revise the errors and the issues that would have affected the main data collection. This helped to fine-tune the instrument to be more reliable and valid.

3.8.1 Reliability of the Instrument

To measure reliability of the questionnaire Cronbach's alpha was used (Cronbach, 1995). Cronbach's alpha only requires a one-time administration; it is suitable because it provides an estimate that is quantifiable of the internal stableness of a

scale (Cooper & Schindler, 2003). At the interval level of measurement, Cronbach is preferred because it is the most useful for multi-item scales. A Cronbach Alpha coefficient of 0.7 was used via SPSS was utilized to analyze the responses received from the questionnaire. Statements with values that were less than 0.7 were amended and restructured to improve the Cronbach Alpha coefficient to more than 0.7. It was concluded that the research instruments used in the study were reliable since a coefficient above 0.7 was obtained (Table 3.2).

Table 3.2: Reliability Test Results

Variables	Cronbach's Alpha	Conclusion
Individual factors	0.796	Reliable
Technological factors	0.708	Reliable
Organizational factors	0.806	Reliable
Environmental factors	0.888	Reliable
Adoption of Viusasa	0.753	Reliable

From summaries in table 3.2, all the respective variable statements were highly reliable.

3.8.1 Validity of the Instrument

Both content and construct validity were utilized. Construct validity involves having the questionnaire divided into segments, where each segment addresses a particular objective, and ensuring that the same is reflected in the conceptual framework. Content validity which is the degree to which a measure goes in ensuring that all the facets of a variable are well represented, the validity was implemented in this study through assessment by the respondents of the pilot study. They were requested to evaluate the questions on the questionnaire for content validity purposes. Following the evaluation of the experts the questionnaire was amended appropriately in preparation of the final collection of data.

Factor analysis was used in this study to establish construct validity evidence based on internal structure in the proposed model development. Factor analysis is a

multivariate method used for the process of data reduction (Cornish, 2007). First, the initial factor loadings were calculated, then factor rotation was done and lastly the calculation of factor scores were executed. The main aim of the factor analysis was to represent a set of variables by a smaller number of factors.

Table 3.3: Validity Test Results

	KMO	Bartlett's Test of Sphericity			Conclusion	Validity
		Approx. Chi-Square	Df	Sig.		
Individual factors	0.787	99.335	10	0.021	Middling	Valid
Technological factors	0.763	65.874	10.	0.001	Middling	Valid
Organisational factors	0.723	46.567	10.	0.020	Middling	Valid
Environmental factors	0.709	94.801	21	0.009	Middling	Valid
Adoption of Viusasa	0.648	28.798	3	0.017	Mediocre	Valid

All the variables showed KMO values of greater than 0.5 implying that the respective statements were valid for data collection.

3.9 Data Analysis and Presentation

Data analysis refers to a mechanism that is used by a researcher to organize the collected data, refine and process it to produce information that can be easily interpreted (Burns & Grove, 2003). SPSS version 25.0 was utilized to generate both descriptive and inferential statistics. descriptive statistics was used to produce the used averages, frequencies, and percentages of the analysis. To quantify the link between the research parameters, inferential techniques were employed using the correlation and regression procedures. Correlation testing was used to assess the degree of the link between the variables. A correlation coefficient (R) guides the researcher in predicting both the magnitude and direction of the association linking the two factors (Kinyua, 2016). In this proposed research a correlation coefficient score of less than 0.3 was used to denote a weak association between variables, while

a score between 0.3 to 0.7 indicated a moderate association while a score above 0.7 indicated a strong association.

Regression testing was used to assess the causative influence of the autonomous factors on the predicted factor. The preceding was based on statistical criteria such as beta values, p-values, R^2, error variances, and t-values at a significance level of 0.05. Tables, charts, themes, and graphs were used to show the overall findings. The following is the multiple linear regression models used in the study:

$$Y=\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Adoption of OTT services

X_1 = individual factors

X_2 = technological factors

X_3 = organizational factors (users)

X_4 = environmental factors (users)

ε is the error term established from heteroscedasticity test

α = constant term

Coefficients β_1 to β_4 = used to measure the variation of the dependent variable (Y) upon a unit change in the explanatory variables (X_1, X_2, X_3 and X_4).

ε = the error term which represents other factors not captured in the model that explain the dependent variable.

3.9.1 Diagnostic Analysis

Pre-estimation tests were performed prior to executing a regression model. Scatterplots were used to assess linearity. In the event of linearity, the graph showed a linear gradient. The assumption, similarly, asserts that the dataset is uniformly dispersed. The Shapiro-Wilk test and scatterplots were used to determine normality of data (Ghasemi & Zahediasl, 2012; Mishra et al., 2019).

In a multivariate regression analysis, multicollinearity is defined as a high continuous connection among two/even more predictor/independent parameters (Stangor, 2014). It was tested using a threshold of tolerance > 0.2 and a VIF< 10 (Salmerón et al., 2018). Similarly, the constant variance (homoscedasticity) test was performed since executing a prediction modelling devoid of the solution to the problem resulted in biased parametric estimations (Bera & Jarque, 1981; Osborne & Waters, 2002). The graphical scatter plot approach was employed.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents empirical outcomes which include; descriptive statistics, unit root tests, error correction regression models, relevant econometric tests and key findings from the investigations.

4.2 Response rate

Table 4.1: Response Rate

Response	Frequency	Percentage
Returned	384	100%
Unreturned	0	0%
Total	**384**	100%

The total questionnaires given were 384. All of them were properly filled and returned. This return saw a 100% response rate. According to Baruch (1999) and Hardigan et al. (2016), a response rate of above 50% is adequate for a descriptive study. 100% response rate was achieved through continuous follow-ups and reminders to the respondents. Likewise, since the questions were also administered directly by one-on-one interviews, the researcher made sure of a high response rate.

4.2 Pilot Test Results

The study piloted 38 respondents and their findings are in table 4.2 below

4.2.1 Reliability Test Results

Reliability analysis was done to evaluate survey construct using Cronbach's alpha. The reliability is expressed as a coefficient between 0 and 1.00. The higher the coefficient, the more reliable is the test. The table 1 below shows the reliability

results for the pilot study. The table 4.2 shows the reliability results for the pilot study

Table 4.2: Reliability Test Results

Variables	Cronbach's Alpha	Conclusion
Individual factors	0.796	Reliable
Technological factors	0.708	Reliable
Organizational factors	0.806	Reliable
Environmental factors	0.888	Reliable
Adoption of Viusasa	0.753	Reliable

The pilot results proved that all the variable questions were reliable with Cronbach's Alpha for individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) and adoption of Viusasa being over 0.7.

4.2.2 Validity Test Results

The test for construct validity for the study is the Kaiser-Meyer-Olkin (KMO) test for construct validity which according to Field (2005), KMO Value/Degree of Common Variance of between 0.90 to 1.00 is "Marvelous", 0.80 to 0.89 is "Meritorious", 0.70 to 0.79 is "Middling" 0.60 to 0.69 is "Mediocre", 0.50 to 0.59 is "Miserable", 0.00 to 0.49 is "Don't Factor". Thus, a KMO coefficient of above 0.800 is "Marvelous" for the study and were evaluated as per Table 2 which indicated the KMO and Bartlett's test of construct validity for the dependent and independent variables.

Table 4.3: Validity Test Results

	KMO	Bartlett's Test of Sphericity			Conclusion	Validity
		Approx. Chi-Square	Df	Sig.		
Individual factors	0.787	99.335	10	0.021	Middling	Valid
Technological factors	0.763	65.874	10.	0.001	Middling	Valid
Organisational factors	0.723	46.567	10.	0.020	Middling	Valid
Environmental factors	0.709	94.801	21	0.009	Middling	Valid
Adoption of Viusasa	0.648	28.798	3	0.017	Mediocre	Valid

The results indicate that all the variables were valid given a KMO of >0.5 and the respective p values of <0.05. The results further implied that there was a significant correlation between individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) and adoption of Viusasa.

4.2.3 Factor Analysis (Communalities)

According to Kaiser (1974), factor-loading values that are greater than 0.4 should be accepted and values below 0.5 should lead to collection of more data to help researcher to determine the values to include. Values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good and values between 0.8 and 0.9 are great, and values above 0.9 are superb. Factor analysis was conducted on statements regarding the variables.

Table 4.4: Communalities

Variable	Statements	Initial	Extraction	Cut-off	Conclusion
Individual factors	Perceived ease of use_1	1.000	0.786	0.400	Accepted
	Perceived ease of use_2	1.000	0.827	0.400	Accepted
	Perceived ease of use_3	1.000	0.862	0.400	Accepted
	Perceived ease of use_4	1.000	0.449	0.400	Accepted
	Perceived ease of use_5	1.000	0.477	0.400	Accepted
Technological factors	Perceived usefulness_1	1.000	0.649	0.400	Accepted
	Perceived usefulness_2	1.000	0.515	0.400	Accepted
	Perceived usefulness_3	1.000	0.521	0.400	Accepted
	Perceived usefulness_4	1.000	0.611	0.400	Accepted
	Perceived usefulness_5	1.000	0.597	0.400	Accepted
Organisational factors	Security and privacy_1	1.000	0.472	0.400	Accepted
	Security and privacy_2	1.000	0.716	0.400	Accepted
	Security and privacy_3	1.000	0.768	0.400	Accepted
	Security and privacy_4	1.000	0.409	0.400	Accepted
	Security and privacy_5	1.000	0.488	0.400	Accepted
Environmental factors	Compatibility_1	1.000	0.787	0.400	Accepted
	Compatibility_2	1.000	0.873	0.400	Accepted
	Compatibility_3	1.000	0.611	0.400	Accepted
	Compatibility_4	1.000	0.663	0.400	Accepted
	Compatibility_5	1.000	0.511	0.400	Accepted
	Compatibility_6	1.000	0.572	0.400	Accepted
	Compatibility_7	1.000	0.538	0.400	Accepted
Adoption of Viusasa	Adoption of viusasa_1	1.000	0.765	0.400	Accepted
	Adoption of viusasa_2	1.000	0.704	0.400	Accepted
	Adoption of viusasa_3	1.000	0.543	0.400	Accepted

The cut-off of the communality is set at 0.5, while the closer the communality is to 1, the better the variable is explained by the factors. If the communality is lower, this suggests that the variable has little in common with the other variables and is likely a target for elimination. The results thus, indicate that the statements of the respective

variables have commonality with each other since the respective variable statements had communality values greater 0.5.

4.3 Socio- demographic characteristics of participants

This section presents the findings of the respondent's background information.

4.3.1 Respondents' Gender

This section presents the gender of the participants whose findings are in Table 4.5.

Table 4.5: Respondents' Gender

Category	Frequency	Percent (%)
Female	73	18
Male	311	82
Total	**384**	**100**

The results indicated that majority of respondents (82%) are male compared to their female counterparts who are 18% showing a representation of both genders in the study without bias. Gender question also served as a gauge in realization of SDG no 5 which is to effectively address gender equality and empowerment of all Women through social economic elevations.

4.3.2 Respondents' Age

This section presents the age of the participants whose findings are in Table 4.6.

Table 4.6: Respondents' Age

Category	Frequency	Percent
Below 25 years	65	17
26-35 years	43	11
36-45 years	156	41
46-55 years	86	22
Above 55 years	34	9

Total	**384**	**100**

Forty-one per cent (41%) were between 36 and 45 years, 22% were between 46 and 55 years, 17% were below 25 years, 11% were between 26 and 35 years while 9% were above 55 years.

This implies that majority of the respondents are of the millennial age and are of the age category that highly values the adoption and usage of ICT solutions. The respondents in all categories displayed capacity and experience to the adoption of VIUSASA.

4.3.3 What is your highest academic qualification?

Table 4.7 shows the highest academic qualification of the respondents. A total 384 participants responded to the questions.

Table 4.7: Highest academic qualification

Category	Frequency	Percent
Postgraduate education	54	14
Graduate education	46	12
College level education	100	26
Secondary level education	184	48
Total	**384**	**100**

The results indicated that majority of the respondents (48 percent) have a secondary level education, 26% of the respondents have college level education, 14% of them are postgraduates while 12% of them are graduates.

4.3.4 Length of use of Viusasa

Table 4.8 shows the length of use of Viusasa of the respondents. A total 384 participants responded to the questions.

Table 4.8: For how long have you used Viusasa?

Category	Frequency	Percent
Over 12 months	90	23
6 – 12 months	127	33
1 – 6 months	167	44
Total	**384**	**100**

The findings from the above table revealed that 44% of the respondents have used VIUSASA between one and six months, 33% of them have used VIUSASA between 6 and 12 months while 23% of them have use it for over 12 months.

4.4 Descriptive statistics

This section presents the findings of the descriptive results including the means, standard deviations, percentages and counts.

4.4.1 Individual Factors

Respondents were required to respond to statements related to individual factors (perceived ease of use-users) using the Likert scale: *1=Strongly Agree 2=Agree 3=Not Sure 4=Disagree, 5=Strongly Disagree*. The conclusions on the Likert responses were made by combining 1 and 2 to imply disagreement, 3 to imply neutral decision and 4 and 5 to imply agreement. The results were analyzed and displayed in Table 4.9.

Table 4.9: Descriptive results of Individual Factors (Perceived Ease of Use-Users)

Statements	1	2	3	4	5	Mean	Std Dev
1. To navigate from one icon of Viusasa application is easy	43%	52%	2%	3%	0%	1.64	0.66
2. Viusasa requires less ICT knowledge to understand it compared to international OTT platforms	41%	49%	8%	0%	2%	1.73	0.78
3. I understand the options in Viusasa because they use both Kiswahili and English languages	47%	41%	8%	0%	4%	1.73	0.92
4. Viusasa programs are short video clips that are straight to the point	45%	36%	3%	3%	13%	2.03	1.34
5. Viusasa has reduced the waiting time to catch up my favorite programs on TV	43%	43%	0%	8%	6%	1.90	1.12
6. With Viusasa am no longer in a hurry to catch up TV programs at home	39%	40%	10%	3%	8%	1.99	1.13
7. I am aware of the price per video on VIUSASA	40%	36%	5%	10%	9%	2.12	1.29
8. The programs on Viusasa are vast covering any content I want to watch	50%	40%	5%	3%	2%	1.67	0.86
9. The application does not air commercials that delay my watch time	45%	48%	3%	0%	4%	1.72	0.89
Aggregate Mean/Std Dev						**1.84**	**1.00**

Table 4.9, 95% respondents indicated that to navigate from one icon of Viusasa application is easy (mean=1.64≈2, SD=0.66). Likewise, 90% of the respondents agreed that Viusasa requires less ICT knowledge to understand it compared to international OTT platforms (mean=1.73≈2, SD=0.76). The findings indicated that 88% of the respondents agreed that they understand the options in Viusasa because they use both Kiswahili and English languages (mean=1.73≈2, SD=0.92).

The findings indicated that 81% of the respondents agreed that Viusasa programs are short video clips that are straight to the point (mean=2.03≈2, SD=1.34). The findings indicated that 86% of the respondents agreed Viusasa has reduced the waiting time to catch up my favorite programs on TV (mean=1.90≈2, SD=1.12). The findings indicated that 79% of the respondents agreed that with Viusasa they are no longer in a hurry to catch up TV programs at home (mean=1.99≈2, SD=1.13).

The findings showed that 76% of the respondents agreed that they are aware of the price per video on VIUSASA (mean=2.12≈2, SD=1.29). The findings indicated that 90% of the respondents agreed that the programs on Viusasa are vast covering any content I want to watch (mean=1.67≈2, SD=0.86). The findings indicated that 93% of the respondents agreed that the application does not air commercials that delay my watch time (mean=1.72≈2, SD=0.89). This meant that the majority of the respondents agreed that the individual factors led to an improvement in the adoption of VIUSASA. Likewise, these findings corroborate those of Mbachu and Bizien (2017) who stated that individual factors are very critical in the prediction and act as a driving force of adoption of any technological innovations. These factors can be past experience, personal innovativeness, perceived usefulness, attitude, image and delight in an innovation (Davis, 1989; Lewis *et al*., 2003). It has been revealed that perceived ease of use (PEOU) positively influences perceived ease of use. PEOU is the extent one goes in believing that using a particular technology, the effort required to do a particular task will be reduced or eliminated (Davis, 1989). The two individual factors are simultaneously influenced by an external factor (Stamam, Ahamad, Zainudin & Rashidi, 2013).

4.4.2 Technological Factors (Security and Privacy-Users)

Respondents were required to respond to statements related to technological factors (security and privacy-users) using the Likert scale: *1=Strongly Agree 2=Agree 3=Not Sure 4=Disagree, 5=Strongly Disagree*. The conclusions on the Likert responses were made by combining 1 and 2 to imply disagreement, 3 to imply neutral decision and 4 and 5 to imply agreement. The results were analyzed and displayed in Table 4.10.

Table 4.10: Descriptive results of Technological Factors (Security and Privacy-Users)

	Statement	1	2	3	4	5	Mean	Std Dev
1.	Viusasa is less prone to virus attacks	34%	35%	13%	10%	8%	2.23	1.24
2.	Viusasa is less prone to programming bugs	51%	46%	2%	0%	0%	1.51	0.55
3.	Viusasa is less prone to hacking	13%	8%	8%	20%	52%	3.91	1.43
4.	Viusasa does not share my payment details with third party	18%	15%	47%	10%	10%	2.79	1.15
5.	Viusasa application has enables me to create my own security password	30%	49%	15%	3%	3%	1.98	0.89
6.	Viusasa ensures that my address is kept confidential	26%	46%	13%	5%	10%	2.27	1.19
7.	Viusasa is not slowed down by other applications in my device e.g., phone, iPad, computer	39%	36%	17%	0%	8%	2.01	1.12
8.	I am able to save videos so that I can watch them offline even on any operating system such as IOS/Android	15%	28%	36%	10%	10%	2.72	1.15
9.	It takes a short time to download Viusasa application in my device, e.g., phone, iPad, computer	31%	25%	29%	8%	7%	2.35	1.20
10.	Viusasa can be accessed through the web and the mobile phone	18%	15%	47%	10%	10%	2.79	1.15
Average							**2.46**	**1.11**

From Table 4.10, 69% respondents indicated that Viusasa is less prone to virus attack (mean=2.23≈2, SD=1.24). The findings depicted that 97% of the respondents agreed that Viusasa is less prone to programming bugs (mean=1.51≈2, SD=0.55). However, 72% of the respondents indicated that Viusasa is more prone to hacking (mean=3.91≈4, SD=1.43).

The findings indicated that 47% of the respondents were not sure that Viusasa does not share their payment details with third party (mean=2.79≈3, SD=1.15). The findings indicated that 79% of the respondents agreed that Viusasa application has enables them to create my own security password (mean=1.98≈2, SD=0.89). The findings indicated that 72% of the respondents agreed that Viusasa ensures that my address is kept confidential (mean=2.27≈2, SD=1.19).

The findings indicated that 75% of the respondents agreed that Viusasa is not slowed down by other applications in my device e.g., phone, iPad, computer (mean=2.01≈2, SD=1.12). The findings indicated that 43% of the respondents agreed that they are able to save videos so that they can watch them offline even on any operating system such as IOS/Android (mean=2.72≈3, SD=1.15). The findings indicated that 56% of the respondents agreed that Viusasa can be accessed through the web and the mobile phone (mean=2.35≈2, SD=1.20). The findings indicated that 47% of the respondents were not sure that it takes a short time to download Viusasa application in their device, e.g., phone, iPad, computer (mean=2.79≈2, SD=1.15). This meant that the majority of the respondents agreed that the technological factors lead to an improvement in the adoption of VIUSASA.

These findings resonated with Tiago and Maria (2011) and Awa, Ukoha and Emecheta (2016) who established that technological factors were found to contribute more to the adoption of the software (ERP), only that compared to environmental factors. Aljowaidi (2015) claims that enhancement of marketing, operational efficiency, and compatible shopping environment. The rate of implementation of e-commerce was realized to be low due to factors such as; inadequate government initiatives, legislative systems, lack of e-payment ways, poor infrastructure, insufficient external ICT infrastructure, and low e-readiness among local trade associates.

4.4.3 Organizational Factors (Users)

Respondents were required to respond to statements related organizational factors (users) using the Likert scale: *1=Strongly Agree 2=Agree 3=Not Sure 4=Disagree, 5=Strongly Disagree*. The conclusions on the Likert responses were made by

combining 1 and 2 to imply disagreement, 3 to imply neutral decision and 4 and 5 to imply agreement. The results were analyzed and displayed in Table 4.11.

Table 4.11: Descriptive results of Organizational Factors (Users)

Statements		**1**	**2**	**3**	**4**	**5**	**Mean**	**Std dev**
1.	Viusasa has a good response team to deal with security issues	54%	33%	2%	2%	9%	1.79	1.19
2.	My questions are accurately addressed	59%	35%	0%	2%	5%	1.59	0.96
3.	My complaints are timely acted upon by the Viusasa	23%	2%	1%	36%	39%	3.67	1.55
4.	The pioneers of Viusasa have encouraged me to use Viusasa	65%	33%	0%	0%	2%	1.41	0.68
5.	The customer care always responds to me in good mood and attitude	43%	33%	0%	4%	20%	2.25	1.53
6.	The customer care likewise provides me with extra read materials and manuals for me to familiarize with	57%	34%	0%	2%	7%	1.67	1.07
7.	Customers are given discounts and incentives over and above the normal requirements of subscriptions	67%	33%	0%	0%	0%	1.35	0.52
8.	Viusasa holds rallies and tours to various parts of the country for personal contact with the customers	21%	48%	0%	4%	26%	2.65	1.51
Average							**2.05**	**1.13**

From Table 4.11, 87% respondents indicated that Viusasa has a good response team to deal with security issues (mean=1.79≈2, SD=1.11). Likewise, 94% of the respondents agreed that their questions are accurately addressed (mean=1.59≈2, SD=0.96). The findings indicated that 75% of the respondents disagreed that their complaints are timely acted upon by the Viusasa (mean=3.67≈4, SD=1.15).

The findings indicated that 98% of the respondents agreed that the pioneers of Viusasa have encouraged them to use Viusasa (mean=1.41≈1, SD=0.68). The findings indicated that 76% of the respondents agreed that the customer care always responds to them in good mood and attitude (mean=2.57≈2, SD=1.53). These findings are in line with Hussein, Mohamed, Ahlan, Mahmud and Aditiawarman (2010) who specified that constructs such as; web-based service quality, social influence, internet trust, trusts of the government political self-efficacy, and perceived risk are important in the adoption of technology.

The findings indicated that 91% of the respondents agreed that the customer care likewise provides them with extra read materials and manuals for them to familiarize with (mean=1.67≈2, SD=1.07). The findings indicated that 100% of the respondents agreed that customers are given discounts and incentives over and above the normal requirements of subscriptions (mean=1.35≈2, SD=0.52).

The findings indicated that 69% of the respondents agreed that Viusasa holds rallies and tours to various parts of the country for personal contact with the customers (mean=2.65≈3, SD=1.51). This means that the majority of the respondents agreed that the organizational factors (users) lead to an improvement in the adoption of VIUSASA.

Likewise, these findings were consistent with Atkin, Chaudhry, Chaudry, Khandelwal, & Verhoogen (2017) that large firms are more likely to successfully take on an innovation, both because of the availability of funds and the foreseen benefits of the technology adoption. Those organisations whose market share is large are more likely to initiate a new technology because of the capacity they possess such that they are able to distribute the profits they receive from the adoption. Heavy investments in research, development, marketing, training, infrastructure and employment of workers come along with the invention and development of a new technology (Atkin *et al.*, 2017). Huang *et al*. (2017) notes that cost of services is crucial and thus OTT players can fail to make profits due to high costs of creation and limited sources of revenues.

4.4.4 Environmental Factors (Users)

Respondents were required to respond to statements related environmental factors (users) using the Likert scale: *1=Strongly Agree 2=Agree 3=Not Sure 4=Disagree, 5=Strongly Disagree*. The conclusions on the Likert responses were made by combining 1 and 2 to imply disagreement, 3 to imply neutral decision and 4 and 5 to imply agreement. The results were analyzed and displayed in Table 4.12.

Table 4.12: Descriptive results of Environmental Factors (Users)

Statements		**1**	**2**	**3**	**4**	**5**	**Mean**	**Std Dev**
1.	The content producers are properly rewarded	44%	52%	2%	3%	0%	1.64	0.66
2.	The rights to the uploads by content producers are secured by Viusasa	41%	49%	8%	0%	2%	1.73	0.78
3.	Content producers are discouraged to upload mature and socially inappropriate content on Viusasa	47%	41%	8%	0%	4%	1.73	0.92
4.	There is fair competition between Viusasa and other platforms like YouTube	45%	36%	3%	3%	13%	2.03	1.34
5.	The costs per video (streaming/download) are fair to you as a user compare to other platforms	43%	44%	0%	8%	6%	1.90	1.12
6.	The application consumes heavy traffic and works only under strong network	39%	40%	10%	3%	8%	1.99	1.13
7.	The company allows participation of both genders in advertising of their programs	40%	36%	5%	10%	9%	2.12	1.29
8.	Viusasa registration requirements are minimal	50%	40%	5%	3%	2%	1.67	0.86
9.	The company allows participants from every social/economic class to be partakers of their programs	45%	48%	3%	0%	4%	1.72	0.89
Average							**1.84**	**1.00**

From Table 4.12, 95% respondents indicated that the content producers are properly rewarded (mean=1.64≈2, SD=0.66). Likewise, 90% of the respondents agreed that

the rights to the uploads by content producers are secured by Viusasa (mean=1.73≈2, SD=0.78).

The findings showed that 88% of the respondents agreed that content producers are discouraged to upload mature and socially inappropriate content on Viusasa (mean=1.73≈2, SD=0.72). The findings indicated that 81% of the respondents agreed that there is fair competition between Viusasa and other platforms like YouTube (mean=2.03≈2, SD=1.34). The findings indicated that 87% of the respondents agreed that the costs per video (streaming/download) are fair to you as a user compared to other platforms (mean=1.90≈2, SD=1.12). The findings indicated that 80% of the respondents agreed that with the application consumes heavy traffic and works only under strong network (mean=1.99≈2, SD=1.13).

The findings indicated that 76% of the respondents agreed that the company allows participation of both genders in advertising of their programs (mean=2.12≈2, SD=1.29). The findings indicated that 90% of the respondents agreed that Viusasa registration requirements are minimal (mean=1.67≈2, SD=0.86). The findings indicated that 93% of the respondents agreed that the company allows participants from every social/economic class to be partakers of their programs (mean=1.72≈2, SD=0.89). The majority of the respondents agreed that the related environmental factors (users) lead to an improvement in the adoption of VIUSASA.

The findings agreed with Mwambia (2015) who reveal that environmental factors entail the setting or the arena in which a company conducts its business. These environmental factors comprise of factors such as industry competition, customer influence, rivalry and regulatory compliance. Therefore, a company is mainly influenced by its industry, competitors and regulations surrounding its operations (Susan *et al.*, 2006). Besides, the connection among expertise and involvement in esteem is straightforwardly corresponding, where the higher the ability capability and the more prominent the experience an organization has with application improvement, the higher the imminent worth of the application (Nazareth & Choi, 2015).

4.4.5 Adoption of VIUSASA

Respondents were required to respond to statements related to Adoption of VIUSASA using the Likert scale: *1=Strongly Agree 2=Agree 3=Not Sure 4=Disagree, 5=Strongly Disagree*. The results were analyzed and displayed in Table 4.13.

Table 4.13: Descriptive results of Adoption of VIUSASA

Statement	Category	Frequency	Percent
Would you use Viusasa to download music	Yes	160	41.7
	Not sure	134	34.9
	No	90	23.4
Would you use Viusasa to download videos	Yes	197	51.3
	Not sure	178	46.4
	No	9	2.3
Would you use Viusasa to watch or stream in TV programs	Yes	147	38.3
	Not sure	97	25.3
	No	140	36.5
How many videos do you download per week?	Over 10 videos	107	27.9
	1– 10 videos	59	15.4
	None	218	56.8
How many songs do you download per week?	Over 10 songs	257	66.9
	1 – 10 songs	126	32.8
	None	1	0.30
How much do you spend on Viusasa per week?	10 Kshs	180	46.9
	10- 50 Kshs	186	48.4
	50– 100 Kshs	18	4.7
How many times do you use Viusasa app in a week?	Over 10 times	156	40.6
	5 – 10 times	200	52.1
	1 – 5 times	28	7.3
I am satisfied with the services that I am receiving from Viusasa	Agree	199	51.8
	Not sure	158	41.1
	Disagree	27	7

The findings in Table 4.13 indicated that 41.7% of the respondents indicated that they use Viusasa to download music, 51.3% of the respondents indicated that they use Viusasa to download videos while 38.3% of the respondents indicated that they use Viusasa to watch or stream in TV programs. Likewise, 56.8% of the respondents indicated that they download zero videos from VIUSASA per week while 66.9% of the respondents they download over 10 songs from VIUSASA per week. Regarding the cost and frequency of downloads, 48.4% of the respondents indicated that they spend Kshs 10 to Kshs 50 on Viusasa per week while 52.1% of the respondents indicated that they use Viusasa app 5 to 10 times in a week. In general, the findings indicate that 51.8% of the respondents likewise agreed that they are satisfied with the services that I am receiving from Viusasa.

4.5 Inferential statistics

Inferential analytics are approaches that allow research to draw conclusions about a population based on data acquired from a subset. In short, they determine the likelihood of obtaining a set of findings from a particular data point. Regression and correlation tests were used in this section.

4.5.1 Correlation analysis

The Pearson correlation ratio, denoted by r, was utilized to establish the relationship between the parameters. The r varies from -1 to 1. A value of 0 indicates that the variable is unrelated to the other, whilst a value of 1 indicates that the parameters are perfectly related. As r approaches zero, the link between the parameters weakens. A + symbol denotes a positive relationship, whereas a – sign denotes a negative correlation (Gogtay & Thatte, 2017).

Table 4.14: Correlation matrix

Correlations		Adoption of VIUSASA	Individual Factors	Technological factors	Organizational Factors	Environmental factors
Adoption of VIUSASA	R	1				
	P-value					
	N	384				
Individual Factors	R	.494**	1			
	P-value	0.000				
	N	384	384			
Technological factors	R	.512**	.290**	1		
	P-value	0.000	0.000			
	N	384	384	384		
Organizational Factors	R	R	.171**	.181**	1	
	P-value	P-value	0.001	0.000		
	N	384	384	384	384	
Environmental factors	R	.499**	.204**	.294**	.187**	1
	P-value	0.000	0.000	0.000	0.000	
	N	384	384	384	384	384

** Correlation is significant at the 0.01 level (2-tailed).

The results in table 4.14 above showed that there is a direct and strong relationship between individual factors and the adoption of OTTs in Kenya (r=0.494**, p=0.000). The strong r value of 0.494 indicated a value of greater than 0 which implied that individual factors as a linear variable has a positive association with the adoption of OTTs in Kenya. These findings corroborated those of Mbachu and Bizien (2017) who stated that individual factors are very critical in the prediction and act as a driving force of adoption of any technological innovations. These factors can be past experience, personal innovativeness, perceived usefulness, attitude, image and delight in an innovation (Davis, 1989; Lewis *et al*., 2003). It has been revealed that perceived ease of use (PEOU) positively influences perceived ease of use. PEOU is the extent one goes in believing that using a particular technology, the effort required

to do a particular task will be reduced or eliminated (Davis, 1989). The two individual factors are simultaneously influenced by an external factor (Stamam et al., 2013).

Likewise, the table showed that there is a direct and strong relationship between technological factors and the adoption of OTTs in Kenya (r=0.522**, p=0.000). The strong r value of 0.522 indicated a value of greater than 0 which implied that technological factors as a linear variable has a positive association with the adoption of OTTs in Kenya. These findings resonated with Tiago and Maria (2011) and Awa, Ukoha and Emecheta (2016) who established that technological factors were found to contribute more to the adoption of the software (ERP), only that compared to environmental and company factors.

The results further showed that there is a direct and strong relationship between organizational factors (users) and the adoption of OTTs in Kenya (r=0.433**, p=0.000). The strong r value of 0.433 indicated a value of greater than 0 which implied that organizational factors (users) as a linear variable has a positive association with the adoption of OTTs in Kenya. These findings were consistent with Huang *et al*. (2017) who notes organizational factors such as cost of services are crucial and thus OTT players can fail to make profits due to high costs of creation and limited sources of revenues.

The results further showed that there is a direct and strong relationship between environmental factors (users) and the adoption of OTTs in Kenya (r=0.499**, p=0.000). The strong r value of 0.499 indicated a value of greater than 0 which implied that environmental factors (users) as a linear variable has a positive association with the adoption of OTTs in Kenya. The findings agreed with Mwambia (2015) who revealed that environmental factors entail the setting or the arena in which a company conducts its business. These environmental factors comprise of factors such as industry competition, customer influence, rivalry and regulatory compliance. Therefore, a company is mainly influenced by its industry, competitors and regulations surrounding its operations (Susan *et al*., 2006). Besides, the connection among expertise and involvement in esteem is straightforwardly corresponding, where the higher the ability capability and the more prominent the

experience an organization has with application improvement, the higher the imminent worth of the application (Nazareth & Choi, 2015).

4.5.2 Relationship between independent and dependent variables

Table 4.15 presents the model of fitness of regression used where the results implied that the selected factors are good and satisfactory predictors of the adoption of OTTs in Kenya. This is evident, as shown by the R^2 value which 0.593. This implied that individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) explain more than 50% (that is 59.3%) of the adoption of OTTs in Kenya. These findings corroborate those of Mbachu and Bizien (2017) who stated that individual factors are very critical in the prediction and act as a driving force of adoption of any technological innovations. Awa, Ukoha and Emecheta (2016) established that technological factors were found to contribute more to the adoption of the software (ERP), only that compared to environmental and company factors. Huang *et al*. (2017) notes organizational factors such as cost of services are crucial and thus OTT players can fail to make profits due to high costs of creation and limited sources of revenues. Mwambia (2015) revealed that environmental factors entail the setting or the arena in which a company conducts its business. These environmental factors comprise of factors such as industry competition, customer influence, rivalry and regulatory compliance.

Table 4.15: Summary Model of fitness

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	.770a	0.593	0.588

The Analysis of Variance as shown in Table 4.16 was also statistically significant implying that individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) affects the adoption of OTTs in Kenya. This is further supported by the F statistic 137.797where the value was greater than the critical value at 0.05 significance level, $F_{statistic} = 137.797 > F_{critical} = 2.372$ (4, 374).

Table 4.16: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.514	4	7.129	137.797	.000b
Residual	19.607	379	0.052		
Total	48.121	383			

The findings revealed that individual factors and the adoption of OTTs in Kenya have a direct and strong relationship (**β**=0.326, p=0.000) indicating that an increase in one unit of individual factors improves the adoption of OTTs in Kenya by 0.326 units. Therefore, based on the hypothesis that **H_{01}:** The effect of individual factors on the adoption of OTT services in Kenya is not statistically significant, the study rejects the null hypothesis and indicates that the effect of individual factors on the adoption of OTT services in Kenya is statistically significant

These findings corroborate those of Mbachu and Bizien (2017) who stated that individual factors are very critical in the prediction and act as a driving force of adoption of any technological innovations. These factors can be past experience, personal innovativeness, perceived usefulness, attitude, image and delight in an innovation (Davis, 1989; Lewis *et al*., 2003). It has been revealed that perceived ease of use (PEOU) positively influences perceived ease of use. PEOU is the extent one goes in believing that using a particular technology, the effort required to do a particular task will be reduced or eliminated (Davis, 1989). The two individual factors are simultaneously influenced by an external factor (Stamam, Ahamad, Zainudin & Rashidi, 2013). Table 4.15 shows the results obtained

The results also revealed that technological factors and the adoption of OTTs in Kenya have a direct and strong relationship (**β**=0.268, p=0.000) indicating that an increase in one unit of technological factors improves the adoption of OTTs in Kenya by 0.268 units. Therefore, based on the hypothesis that H02: The effect of technological factors on the adoption of OTT services in Kenya is not statistically significant, the study rejects the null hypothesis and indicates that the effect of

technological factors on the adoption of OTT services in Kenya is statistically significant.

These findings resonated with Tiago and Maria (2011) and Awa, Ukoha and Emecheta (2016) who established that technological factors were found to contribute more to the adoption of the software (ERP), only that compared to environmental and company factors. Aljowaidi (2015) claims that enhancement of marketing, operational efficiency, and compatible shopping environment. The rate of implementation of e-commerce was realized to be low due to factors such as; inadequate government initiatives, legislative systems, lack of e-payment ways, poor infrastructure, insufficient external ICT infrastructure, and low e-readiness among local trade associates.

Regression of the coefficients results revealed that organizational factors (users) and the adoption of OTTs in Kenya have a direct and strong relationship (**β**=0.166, p=0.000) indicating that an increase in one unit of organizational factors (users) improve the adoption of OTTs in Kenya in Kenya by 0.166 units. Therefore, based on the hypothesis that **H_{03}:** The effect of organizational factors on the adoption of OTT services in Kenya is not statistically significant, the study rejects the null hypothesis and indicates that the effect of organizational factors on the adoption of OTT services in Kenya is statistically significant.

These findings were consistent with Atkin, Chaudhry, Chaudry, Khandelwal, & Verhoogen (2017) that large firms are more likely to successfully take on an innovation, both because of the availability of funds and the foreseen benefits of the technology adoption. Huang *et al*. (2017) who notes organizational factors such as cost of services are crucial and thus OTT players can fail to make profits due to high costs of creation and limited sources of revenues

Regression of the coefficients results revealed that environmental factors (users) and the adoption of OTTs in Kenya have a direct and strong relationship (**β**=0.270, p=0.000) indicating that an increase in one unit of environmental factors (users) improves the adoption of OTTs in Kenya by 0.270 units. Therefore, based on the hypothesis that **H_{04}:** The effect of environmental factors on the adoption of OTT

services in Kenya is not statistically significant, the study rejects the null hypothesis and indicates that the effect of environmental factors on the adoption of OTT services in Kenya is statistically significant.

The findings agreed with Mwambia (2015) who reveal that environmental factors entail the setting or the arena in which a company conducts its business. These environmental factors comprise of factors such as industry competition, customer influence, rivalry and regulatory compliance. Therefore, a company is mainly influenced by its industry, competitors and regulations surrounding its operations (Susan *et al.*, 2006). Besides, the connection among expertise and involvement in esteem is straightforwardly corresponding, where the higher the ability capability and the more prominent the experience an organization has with application improvement, the higher the imminent worth of the application (Nazareth & Choi, 2015).

Table 4.17: Regression of coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	-0.053	0.092		-0.581	0.561
Individual Factors	0.326	0.035	0.318	9.273	0.000
Technological factors	0.268	0.031	0.303	8.652	0.000
Organizational Factors	0.166	0.020	0.285	8.469	0.000
Environmental factors	0.270	0.030	0.314	9.103	0.000

a Dependent Variable: Adoption of VIUSASA
b Predictors: (Constant), Environmental factors, Organizational Factors, Individual Factors, Technological factors

$$Y = -0.053 + 0.326X_1 + 0.268X_2\ 0.166X_3 + 0.270X_4$$

Where:

Y = Adoption of OTT services

X_1 = individual factors

X_2 = technological factors

X_3 = organizational factors (users)

X_4 = environmental factors (users)

4.6 Hypothesis Testing

The acceptance/rejection format was that, if the p-value is less than 0.05, the H_{01} is rejected but if it's greater than 0.05, the H_{01} is rejected and the alternative hypothesis accepted. The null hypothesis **H_0**: was that the effect of individual factors, technological factors, organizational factors and environmental factors on the adoption of OTT services in Kenya is not statistically significant.

Table 4.18: Hypotheses Test Results

Tested Hypothesis	Rule	P-value	Results of the hypothesis
H_{01}: The effect of individual factors on the adoption of OTT services in Kenya is not statistically significant.	When p value is less than 0.05, reject the null hypothesis	0.000	Rejected
H_{02}: The effect of technological factors on the adoption of OTT services in Kenya is not statistically significant.	When p value is less than 0.05, reject the null hypothesis	0.000	Rejected
H_{03}: The effect of organizational factors on the adoption of OTT services in Kenya is not statistically significant.	When p value is less than 0.05, reject the null hypothesis	0.000	Rejected
H_{04}: The effect of environmental factors on the adoption of OTT services in Kenya is not statistically significant.	When p value is less than 0.05, reject the null hypothesis	0.000	Rejected

Based on the multiple regression findings, the null hypotheses were rejected since the P values were less than 0.05 and thus, the effect individual factors, technological factors, organizational factors and environmental factors on the adoption of OTT services in Kenya is statistically significant.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of major findings of the study and describes the conclusions as well as the recommendations which were in line with the objectives of the study. The summary is done based on the output of the descriptive and inferential statistical analyses. This chapter also recommends on areas that needed more research.

5.2 Summary of Findings

The study sought to develop a model for the effect of selected factors on adoption of OTTs in Kenya. The findings were presented in the following sections. Based on the findings above the study indicated that individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) effects were positive and significant explanatory variables of the adoption of OTTs in Kenya.

5.2.1 Individual factors and the adoption of OTT services in Kenya.

The findings showed that there is a direct and strong relationship between individual factors and the adoption of OTTs in Kenya. The regression findings revealed those individual factors and the adoption of OTTs in Kenya had a positive and significant relationship.

5.2.2 Technological factors and the adoption of OTT services in Kenya.

The correlation findings showed that there is a direct and strong relationship between technological factors and the adoption of OTTs in Kenya. The regression findings revealed those technological factors and the adoption of OTTs in Kenya had a direct and strong relationship.

5.2.3 Organizational factors and the adoption of OTT services in Kenya.

The correlation findings showed that there is a direct and strong relationship between organizational factors (users) and the adoption of OTTs in Kenya. The regression findings revealed those organizational factors (users) and the adoption of OTTs in Kenya had a direct and strong relationship.

5.2.4 Environmental factors and the adoption of OTT services in Kenya.

The correlation findings showed that there is a direct and strong relationship between environmental factors (users) and the adoption of OTTs in Kenya. The regression findings revealed those environmental factors (users) and the adoption of OTTs in Kenya had a direct and strong relationship.

5.3 Conclusion

It was therefore, concluded that individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) have a positive and significant relationship with the adoption of OTTs in Kenya.

5.3.1 Individual factors and the adoption of OTT services in Kenya.

Thus, Viusasa App presents qualities that are perceived as easy to use, for instance, the app is easy to navigate, required less knowledge to understand it compared to international OTT platforms, it is accessed via local language understood by many users in Kenya and presented short clips that presented the qualities of fun, short waiting time and affordability.

5.3.2 Technological factors and the adoption of OTT services in Kenya.

This was evidenced by the findings that indicated that Viusasa is less prone to virus attack, programming bugs and to hacking. Therefore, by use of VIUSASA, clients are assured that their payment details could not be shared with third parties (confidentiality). Besides, it takes a short time to download a video and saving of

videos for offline viewing was possible. Thus, the advantages regarding technological factors have been visible in the adoption of OTT services in Kenya.

5.3.3 Organizational factors and the adoption of OTT services in Kenya.

The adoption of VIUSASA has also been attributed to the timely response team to complaints and feedback. The service providers also ensure that the subscribers are provided with extra read materials and manuals for me to familiarize with which ensures the ease of use by the subscribers. Likewise, by extending discounts and incentives over and above the normal requirements of subscriptions to subscribers, the app has been widely adopted in Kenya.

5.3.4 Environmental factors and the adoption of OTT services in Kenya.

The app has gained prominence in Kenya since it offers content that is socially acceptable and valued, which ensures the preservation of social norms and culture. For instance, the content producers were properly rewarded, the rights to the uploads by content producers were secured by Viusasa, content producers were discouraged to upload mature and socially inappropriate content on Viusasa and allowed participation of both genders in advertising their programs.

5.4 Recommendations

5.4.1 Recommendations to broadcasting stations

Pay TV providers and broadcasting stations that were providing or purposed to provide OTT services are encouraged to focus on the key individual factors that lead to the adoption of OTT services. The understanding assisted on the providers improving their relationship with the users and have a bigger market even in terms of the customer base. Telecom operators in Kenya are encouraged to develop competitive OTT services to gain a competitive advantage over the present OTTs' players.

5.4.2 Recommendations to Telecoms

The study also recommends the VIUSASA service providers to scale up their security platforms and solidify the application's perceived ease of use. This is evidenced by majority of the respondents in the current study acknowledging that security plays a pivotal role in them using the VIUSASA app. The study also encourages the VIUSASA service providers to ensure that they scale up their promotional activities via use of social media and other ICT-related platforms (other than the rallies and tours). This will ensure that the knowledge about VIUSASA covers a larger group of potential subscribers in Kenya at minimum costs.

5.4.3 Recommendations to policymakers

Likewise, the communication legislators in Kenya such as Communications Authority of Kenya (CA) and the Media Council of Kenya who are mandated to oversee media and broadcasting services in Kenya are advised to come up with media policies and programmes that uplift Kenyans through investing in quality local content. The media should show Kenyans the importance of OTT services.

5.5 Study Limitations

The study was faced with the late response by the respondents to participate in the study since it targeted respondents who were VIUSASA users. The researcher mitigated this by making regular follow ups on phone and by email. Likewise, an informed consent by the respondents was availed where the respondents were debriefed on the objectives of the research and the possible harm (if any). With informed consent to participate or withdraw, the respondents' privacy was taken into consideration. By being objective and avoiding misrepresentation of results, the researcher and the respondents' personal integrity was observed during the research. In order to guarantee the respondents' and the institution's anonymity, confidentiality was used in the study. By coding the names, confidentiality of the shared information and the names of the respondents for this study was guaranteed.

In addition, the lack of reliability of the questionnaire hindered accuracy of the data obtained. The researcher controlled this by undertaking pilot test to ensure the internal consistency of each question. In addition, the researcher sorted this issue out by seeking accreditation NACOSTI and authorization from the graduate school.

5.6 Areas for Further Study

The findings indicate that the selected factors predict only 59.3% of the adoption of OTTs in Kenya. Therefore, the remaining percentage 40.3% is explained by other factors not included in the model. This calls for further studies in the related field to consider other relevant factors other than individual factors (perceived ease of use-users), technological factors (security and privacy-users), organizational factors (users) and environmental factors (users) for their modelling. This will provide depth to the study and extend wells of knowledge on the factors that affect the adoption of OTTs in Kenya.

Likewise, future scholars are encouraged to conduct further research to incorporate a moderating or a mediating variable to assess and increase the robustness of the study findings. In addition, further studies could be conducted in other technological platforms apart from VIUSASA for a comparison approach to the findings where the studies could provide a more wholistic approach to addressing the problems experienced in the adoption of OTT services.

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APPENDICES

Appendix I: Letter of Introduction

Date……

Dear Respondent,

I am a student at Jomo Kenyatta University of Agriculture and Technology currently pursuing Master of Science in ICT Policy and Regulation. As part of the requirement for graduation, I am undertaking research to determine a *"model for adoption of OTT services in Kenya."* The main reason of this letter is to kindly request you to have some time off your schedule to respond to the questions in the questionnaire. The information that you will provide will only be used for academic purpose and treated with highest confidentiality. Your kind response will be of much value and will be highly regarded.

Thank you for your consideration and assistance.

Regards,

Rono Kiptum

Appendix II: Questionnaire

Kindly answer the following questions as honestly as possible. The information given will be treated with utmost confidentiality. Please do not write your name anywhere on this questionnaire. You are encouraged to give your honest opinion.

Section A: Personal Information

1) What is your gender?
   a) Male [ ]
   b) Female [ ]
2) What is your age bracket?

   Below 25 years [ ] 26-35 years [ ]

   36-45 years [ ] 46-55 years [ ]

   Above 55 years [ ]
3) What is your highest academic qualification?

   Secondary [ ] College [ ]

   Graduate [ ] Post Graduate [ ]
4) For how long have you used Viusasa?

   1 – 6 months [ ] Over 12 months [ ]

   6 – 12 months [ ]

Section B: Individual Factors

This sub section has statement related to individual factors of Viusasa. Kindly use the Likert scale to rate the extent to which you agree with the following statements. Use the scale of **Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) and Strongly Disagree (5).**

No.	Individual Factors	1	2	3	4	5
1.	To navigate from one icon of Viusasa application is easy					
2.	Viusasa requires less ICT knowledge to understand it compared to international OTT platforms					
3.	I understand the options in Viusasa because they use both Kiswahili and English languages					
4.	Viusasa programs are short video clips that are straight to the point					
5.	Viusasa has reduced the waiting time to catch up my favorite programs on TV					
6.	With Viusasa am no longer in a hurry to catch up TV programs at home					
7.	I am aware of the price per video on VIUSASA					
8.	The programs on Viusasa are vast covering any content I want to watch					
9.	The application does not air commercials that delay my watch time					

10. In what other way have you found Viusasa to be easy to use?.....
    .....
11. Do you think perceived ease of use of Viusasa has influenced its adoption? Yes /No (Kindly explain your answer……...

Section C: Technological Factors (Security and Privacy-Users)

This sub section has statement related to technological factors of Viusasa application. Kindly use the Likert scale to rate the extent to which you agree with the following statements. Use the scale of **Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) and Strongly Disagree (5).**

No.	Technological factors	1	2	3	4	5
1.	Viusasa is less prone to virus attack					
2.	Viusasa is less prone to programming bugs					
3.	Viusasa is less prone to hacking					
4.	Viusasa does not share my payment details with third party					
5.	Viusasa application has enables me to create my own security password					
6.	Viusasa ensures that my address is kept confidential					
7.	Viusasa is not slowed down by other applications in my device e.g. phone, iPad, computer					
8.	I am able to save videos so that I can watch them offline even on any operating system such as IOS/Android					
9.	It takes a short time to download Viusasa application in my device, e.g. phone, iPad, computer					
10.	Viusasa can be accessed through the web and the mobile phone					

11. In what other ways does is Viusasa secure and assures privacy? ……

12. Has it influenced the adoption of local software? Yes /No (explain your answer……...

Section D: Organizational Factors (Users)

This sub section has statement related to organizational factors of Viusasa application.

Kindly use the Likert scale to rate the extent to which you agree with the following statements. Use the scale of **Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) and Strongly Disagree (5).**

No.	**Organizational Factors**	**1**	**2**	**3**	**4**	**5**
1.	Viusasa has a good response team to deal with security issues					
2.	My questions are accurately addressed					
3.	My complaints are timely acted upon by the Viusasa					
4.	The pioneers of Viusasa have encouraged me to use Viusasa					
5.	The customer care always responds to me in good mood and attitude					
6.	The customer care likewise provides me with extra read materials and manuals for me to familiarize with					
7.	Customers are given discounts and incentives over and above the normal requirements of subscriptions					
8.	Viusasa holds rallies and tours to various parts of the country for personal contact with the customers					

In what other ways does is Viusasa secure and assures privacy?
.....

Has it influenced the adoption of local software? Yes /No (explain your answer.....

Section E: Environmental Factors (Users)

This sub section has statement related to environmental factors. Kindly use the Likert scale to rate the extent to which you agree with the following statements. Use the scale of **Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) and Strongly Disagree (5).**

No.	Environmental factors	1	2	3	4	5
	The content producers are properly rewarded					
	The rights to the uploads by content producers are secured by Viusasa					
	Content producers are discouraged to upload mature and socially inappropriate content on Viusasa					
	There is fair competition between Viusasa and other platforms like YouTube					
	The costs per video (streaming/download) are fair to you as a user compare to other platforms					
	The application consumes heavy traffic and works only under strong network					
	The company allows participation of both genders in advertising of their programs					
	Viusasa registration requirements are minimal					
	The company allows participants from every social/economic class to be partakers of their programs					

10. In what other ways has the developing setting and regulatory environment supported the adoption of Viusasa?

    ..……

    ……

11. Has it influenced the adoption of local software? Yes /No (explain your answer

    ……

    ……

Section F: Adoption of VIUSASA

1. Would you use Viusasa to:

Download music	Yes ()	Not sure ()	No ()
Download videos	Yes ()	Not sure ()	No ()
Watch or stream in TV programs	Yes ()	Not sure ()	No ()

2. How many videos do you download per week?

   Over 10 videos [ ] 1– 10 videos [ ] None [ ]

3. How many songs do you download per week?

   Over 10 songs [ ] 1 – 10 songs [ ] None [ ]

4. How much do you spend on Viusasa per week?

   10 Kshs [ ] 10- 50 Kshs [ ] 50– 100 Kshs [ ]

5. How many times do you use Viusasa app in a week?

   Over 10 times [ ] 5 – 10 times [ ] 1 – 5 times [ ]

6. I am satisfied with the services that I am receiving from Viusasa. (Kindly tick the most applicable)

   Agree [ ] Not sure [ ] Disagree [ ]