EFFECTS OF FINANCIAL INNOVATIONS ON FINANCIAL PERFORMANCE OF NON-GOVERNMENTAL ORGANIZATIONS IN THE HEALTH SECTOR IN NAIROBI COUNTY

DINAH MUTHUKA

D61/62864/2011

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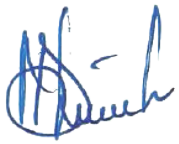
DECLARATION

This research project is my original work and has not been presented in any other institution or this university.



Signed: …… Date: 26th November 2021 **……**

MUTHUKA DINAH

D61/62864/2011

This research project has been submitted with my approval as the university supervisor.

Signed: …… Date: 26/11/2021 **……**

DR. KENNEDY O. OKIRO

LECTURER, DEPARTMENT OF FINANCE AND ACCOUNTING SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

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DEDICATION

I dedicate this research project to my family, friends, colleagues and fellow students who became family along the way for their concern and unwavering support throughout my studies. You have been my greatest strength. God bless you.

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ABBREVIATIONS AND ACRONYMS

DOI	-	Diffusion of Innovation
HBR	-	Harvard Business Review
I.T	-	Information Technology
ICT	-	Information and Communication Technology
KCB	-	Kenya Commercial Bank
MSEs	-	Micro and Small Enterprises
NGO	-	Non-Governmental Organization
NGOs	-	Non-Governmental Organizations
PEU	-	Perceived Ease of Use
PU	-	Perceived Usefulness
ROA	-	Return on Asset
SPSS	-	Statistical Package of Social Sciences
TAM	-	Technology Acceptance Model
TQM	-	Total Quality Management

ABSTRACT

The dearth in adoption of innovative financial systems is believed to be a drawback for Non-governmental organizations (NGOs) in achieving of organization objectives. The debate round its perceived benefits in the production processes and subsequent outcomes is still ongoing with one side approving of its ability n boosting financial performance while the other one disapproving. The investigations attempt to fill the vacuum in the reporting of the impact of financial innovations on performance among non-public institutions in the healthcare field in Nairobi County. The concept of financial innovation was measured using the three innovations; product, process and institutional innovations while financial performance was assessed in terms of organizational return-on-investments. This study involved a population of 113 NGOs in the health sector, which were based in Nairobi County, where a sample size of 34 health NGOs was arrived at using a 30% proposition by Mugenda and Mugenda. The study also used cross sectional research design incorporating sampling of the population to acquire a target population of 34 NGOs. Secondary data was collected from the websites, annual reports, audited and published financial statements of these NGOs, with regards to ROI and the three types of innovations undertaken by the institutions. Data was ran through SPSS and was analyzed using descriptive statistics using mean and standard deviations and using inferential statistics using multiple linear regression. Coefficient of correlations were also obtained using the Karl Pearson's correlation coefficients. The study found out that the NGOs implemented at least one type of financial innovation to their daily operations. The findings further noted that the three innovations with a significant value of 0.000 (< 0.05), had a positive and statistically significant relationship towards the financial performance of the health sector NGOs in Nairobi County. This study recommended that NGOs should put in place appropriate innovations which would bring about exemplary performance as well as efficient delivery of services and information to their stakeholders and beneficiaries. Recommendations were also made that there should be a wider exploration of other innovations adopted by the NGOs so as to evaluate them against financial performance of these institutions.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

For guaranteed success, Non-governmental organizations (NGOs) have to set in place effective systems that can manage and measure organizational performance. NGOs are obligated to monitor and assess performance from several perceptions, taking into consideration the performance of the projects or programs, the objective of funders, the requirement of beneficiaries and the inside effectiveness of an organization. Effective financial performance makes an organization attractive to its stakeholders hence attracting more resources (Mohammed & Elio, 2015). A framework was projected for gauging the financial performance of NGOs by Ritchie and Kolodinsky (2003). This framework encompasses an efficient strategy on fundraising, community support, expenditure and effectiveness in cost. Implementation of financial innovation can help an organization to be more effective and efficient in its operation, promote transparency, and avoid loss of resources and to ensure trustworthiness in financial reporting to its stakeholders. Financial innovation is a major concept for attaining a competitive edge and winning the confidence of stakeholders.

The right measures of performance are the ones that support an organization to focus its actions towards attaining its strategic objectives (Donald & Deln, 2009). Brennan and Soloman (2008) in their research mentions other financial indicators that includes, long-term investment value, financial reliability of an organization, and the use of 30 corporate assets. The scholars talk about non-financial indicators which includes; innovations, the ability to draw, nature and retain best personnel, type of management, the kind of product quality or service offered, community as well as conservational or environmental responsibility.

Majority of the financial innovations focused in the study were technology driven. Technology driven innovation is the implementation of a technical idea which is original to the organization that is creating it. It creates a competitive edge for an organization's products and services. Whereas innovation covers a wider range, this study focused on technology driven financial innovations and how to implement it to products and services. Innovation has to gain acceptance in order to be sustainable. Technology driven financial innovations are forms of innovation, which are implemented through technology. However, it is crucial to clarify that innovation is not only driven by technology. While it is clear that innovation is a well-defined idea, it has a broad meaning in the academic and business world. Technology driven financial innovations are centered on the technological aspects of an innovation rather than the entire business model.

The theoretical theories of diffusion theory, disruptive innovation theory and the technology acceptance model were used to provide the theoretical basis for the investigations. Diffusion of innovation (DOI) is the communication of an innovative concept in a new social setup (Rogers, 2003). According to (Julia, 2019), Disruptive innovation creates a market where there is none hence growing the financial indicators of the organization. The technology acceptance model (TAM) was founded by Davis in 1989 and clarifies how clients embrace and utilize innovation. The study looked at how these theories affect technological innovations and the respective effects on performance on NGOs in the health sector.

1.1.1 Financial Innovation

New innovations in the technological space aims to boost performance in business and eliminate risks (Drucker, 2001). Innovation is the process through which an invention, concept or idea is converted into services or goods that creates value (Kantor, 2001). Innovation is important in the economic progress of any country as well as in achieving competitive advantage in different

industries. It includes changes in the products and services offered by the firm, processes that are used in the firm in its daily operations and also changes in the whole or part of the organization to bring forth efficiency (Kantor, 2001). Technology driven innovation is recognized as a key contributing factor to an organization's competitive advantage. It is also an important aspect in ensuring a successful economic and financial outcome of organizations.

Financial innovations can be classified into three types; product, process and institutional innovation as explained by Frame and White (2002). Process innovation involves development of new production systems that boost efficiency and infiltration into the markets. Product innovation refers to the creation of new products or services offered by a firm, so as to accommodate changes in the market and also improve general efficiency of the firm. Institutional innovation relates to the technology implementation in the firm, changes in the business structure so as to bring about effective administration, smooth operations and customer satisfaction and a conducive working environment.

Academicians and specialists define types of innovation differently. However there a number of technological innovations that cut across. Majority of innovations are small and gradual enhancements on currently existing products, processes or services. Some other kind of innovations can be the groundbreaking technological inventions or business models that change an entire industries or markets (Julia, 2019). Whereas there are different types of financial innovations, the investigations will focus on major forms of financial advancements; product innovation, process innovation and institutional innovation.

1.1.1.1 Product Innovation

Product innovations can be defined as introducing new products or making improvements to the existing products so as to cater for the needs of the market or customers. Product innovation could be brought about through new products, improved products, quality products, product performance and differentiated products. Through these aspects, client outreach is increased and thus leading to efficiency and increase in profitability due to an increase in the client base. Product innovation is a process that is continuous and is recurrent, and involves changing of terms, conditions, characteristics and quality of the products offered by the NGOs to their clients (Mwangi, 2018).

It is noted that the aspects of product innovation yield high financial performance, as the process brings forth efficiency and efficacy of the products offered. This also gives the NGOs a competitive advantage against other firms and superior performance of the products they offer. Therefore, product innovation responds to the changes in the market and its preferences and improves the efficiency of the products, protecting the firms from adverse competition and threats in the market (Kibugo, 2016).

1.1.1.2 Process Innovation

Process innovation, which involves process design, change in provision of services, cost effective processes, delivery process and process automation, leads to increased efficiency, expansion of the current market and management of client data (Kibugo, 2016). This includes electronic baking, automated teller machines (ATMs), electronic funds transfer (EFT) and real time gross settlement (RTGS), which are some of the process innovations adopted by the NGOs in deliveries their services to their clients. It is noted that process innovations lead to increase in customer satisfaction, improvement of firm's market share and also cost efficiency (Mwangi, 2018).

1.1.1.3 Institutional Innovation

Institutional innovations relate to changes in technology, incorporation of legal frameworks, business structures and financial intermediaries. Financial and overall organizational performance could be attributed to innovations and mainly institutional innovations as they drive other financial innovations to come into play. Institutional innovations can lead to improvement in performance of the market the firm serves and operates in, through the ability to respond to changes, market forces and needs of the clients (Juma, 2013). (Kibugo, 2016), notes that organizational innovations are a source of competitive advantage, just like other financial innovations, as this shows that the firm appreciates the needs of their customers, technological advancements and the need to better their service delivery.

1.1.2 Financial Performance

The assessment of an organizations financial and market position involves scrutinizing the related non-financial and financial metrics. The two measures are used by organization in a vibrant corporate environment. Financial measure for corporate performance includes; returns on investment, returns on equity, returns on sales, net profits, return on assets, sales growth and return on capital employed (Gerrit & Mohammad, 2010).

As per Donald et al.(2009), a right measure of performance is that which enables an organization to direct its activities in the direction of achieving its strategic goals. Thus, innovations fosters customer satisfaction and enables non-governmental organizations to offer superior service delivery.

In addition, the concept also entails determining the factors that predict organizational profits and productivity through scrutinizing the elements of efficiency, operations and expansion (Tavitiyaman, Zhang & Qu, 2012). Yilmaz, Alpkan & Ergun, 2005 also recognizes technology driven innovation as important contributors to firms' performance through setting up or creating value in unquestionably, random and fast changing environment. While organization performance is mostly measured in terms of profitability, according to (Valmohammadi & Servati, 2011) a firms' performance is based on the type of activities it implements towards the success of its main objectives. The final result is evident characteristics that determine organizational performance. The multiple performance of criteria for nonprofit organizations include responsiveness, cost, flexibility, asset utilization efficiency, productivity and reliability (Chang, Tsui & Hsu, 2013).

Overtime, non-governmental organizations have been noted to be always stuck in the traditional concepts of measure, for instance project inputs, project outputs, project outcomes, project impact and the overall sustainability (Mohammed & Elio, 2015). Fundraising, expenditure, resources allocated and the number of grants implemented. The process of measure requires a broad understanding on how to manage and to choose the right measurement of performance for NGOs and what features of performance leads to effective financial performance and effectiveness. Further, the performance of NGOs could be determined by, its efficiency in fundraising, transparency financial reporting, financial efficiency in project implementation, programs/ projects non-financial efficiency, outcome project performance, impact performance of the project, partnership and quality of the project (Chang, Tsui & Hsu, 2013).

1.1.3 Relationship between Financial Innovation and Financial Performance.

Performance of NGO's is crucial since it is the pillar to enabling the organization to providing crucial services to the under privileged in the community. There exists a proven correlation

between performance and financial innovations. According to recent studies, financial innovation and performance are inextricably linked (Loof & Heshimati, 2013). Klomp & Van (2011), for example, discovered a favorable association between innovation production and sales growth, but none between technological innovation output and employee growth.

The use of innovations is important for organizations to speed up services to customers, increase profits or sales, provide access to information and communicate effectively to stakeholders. Many organizations are using mobile applications to connect to customers or increase demand for their products and services. McAdam and Keogh (2004) in their research found out that organizations that are highly inclined to technology driven innovations have more advantage despite the competitive environment while others looked at the right timings and market acceptance as a proper way to measure the contribution of innovations on performance.

1.1.4 Non-Governmental Organizations

By definition, these are institutions which functions like a business however it does not record financial gains. Such organizations purely exist to serve a community's needs without the intent of making a profit (Nyonje & Nyambegera, 2017). Non-Governmental Organizations carry out a variety of services and humanitarian functions. These services include but not limited to human rights advocacy, humanitarian support, environmental conservation, education or health support among others. They also provide expertise, in implementing and monitoring international donor agreements. NGOs hold an important role in the direct implementation of grants by different entities, and despite their independence from government, many of them rely heavily on government funding to function.

The Kenya's NGO's co-ordination board is steered by the Non-Governmental Organizations Co-ordination Act (Cap 19) of 1990. The Coordination board has the mandate of monitoring the NGO's in Kenya. According to (Venas, 2018), Kenya had a total of 2248 NGOs as of 2018 with majority of them working on environment and human rights. Most NGOs running in Kenya have the headquarters in Nairobi County. According to (Chalinga, 2019), In Nairobi City County, the NGO Coordination Board had roughly a thousand entities registered in 2019. These NGOs have their interventions on different sectors which include, health, relief, agriculture, education, governance, gender, youth, disability industry, the supply of amenities and services among others (Chalinga, 2019). The top 5 NGO sectors in Nairobi County were, education, welfare, children, health and youth. 113 of the NGOs registered in Nairobi has their interventions focused in the health sector.

1.2 Research Problem

Financial innovations support any organization in achieving its main objectives and ensuring it has a competitive advantage over its competitors. However, the problem is that many organizations are stuck in the traditional way of doing business. Despite the possible benefits of the implementation of financial innovations, there is still a debate about whether and how the adoption can improve financial performance and sustainability in the long run. According (Roehm & Sternthal, 2001), change of past procedures or systems and implementation of technology similar to that of more progressive developed countries leads to original technology driven innovations.

There are limited studies done on the use of financial innovations among non-governmental organizations hence the need to research more on the same. Non-governmental organizations contribute largely in aspects of community development, civic advocacy, poverty annihilation, as well as act as a catalyst for political progression. The related existing research have conflicting

findings hence the need for this study to address the gaps. The investigations therefore aim to address the incomprehensive coverage of the effects of innovative process on performance among not-for-profit institutions in the healthcare industry in Nairobi County.

Lack of adoption of financial innovation is theoretically believed to be an obstacle for NGOs in achieving of organization's objectives. During this era of advanced technology environment, there is need for institutions to adopt innovations that aim to improve efficiency and effectiveness in service delivery. Service to humanity and problems solving in the community have been the top needs of NGOs. The organizations have to ensure they adopt strategies in regards to their processes, products and services and operations to ensure optimization of resources and efficiency and effectiveness in their overall mandates. The study therefore sought to weigh out the effects financial innovation has on the financial performance of these institutions.

1.3 Research Objective

The objective of the study was to assess the effects of financial innovations on financial performance in NGOs in the Health Sector in Nairobi County, Kenya.

1.4 Value of the Study

The research study is of great significance to non-governmental organizations which play a very vital role in Kenya's economy. The final results from the study contributes to the inadequate research gaps in financial innovations in relation to organizational financial performance. The study is of value to policy makers in understanding the relevance of technology driven financial innovations to organizations and how it affects financial performance. The research findings also provide insights on the need to take advantage of financial innovations on grants implementation, value for money as well as ensure that funds are directed to the intended beneficiaries. The study

is of value to the theoretical understanding on the concept as well as adding to the theory building on financial innovations and its effects on the financial performance of non-governmental organizations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The section seeks to provide different sources of literature review and the theoretic framework for the research. The theoretic framework in the chapter provides the philosophical basis upon which this research was undertaken.

2.2 Theoretical Review

This chapter seeks to provide detailed literature review on the theories and models explaining the outcome of technology driven financial innovations on the fiscal position of not-for-profit institutions in the health sector, in Nairobi County. They models are discussed in subsequent sections below;

2.2.1 The Diffusion of Innovation Theory

The Diffusion of Innovation (DOI) is among the oldest concepts and was established by Roger (1962). This is a social science theory that is commonly used in research information systems to describe consumer adoption and acceptance of new technology. As per (Rogers, 1995), diffusion is 'the manner through which an invention is relayed via particular channels through out a certain period of time amongst the affiliates of a certain social society'. Rodgers further states that innovations are ideas or things that are seemingly or supposed to be certainly new to the market.

Embracing new concepts, behavior, or innovation does not occur at the same time in any social system; on the contrary it happens in progression whereby some individuals are more apt to embrace the new ideas than others (Rogers, 1995). As per DOI theory, the level of diffusion of innovation is influenced by five key aspects that affects acceptance of any kind of innovations. The aspects include; compatibility, relative advantage, complexity, observability and trial ability.

The extent to which an invention is perceived as being greater to its predecessor is covered in the factors of relative advantage. Complexity is described as the extent to which an innovation or invention is alleged by the prospective consumer as being somewhat challenging to put into use or comprehend. Compatibility is explained as the degree to which an invention is perceived to be likeminded with present beliefs, experiences, values and the requirements of adopters (Rogers, 1995). Trial ability, according to the author, is "the level to which new ideas are explored with on a limited basis." while observability is described as the "degree to which an invention or innovation's effect is evident."

The diffusion of innovation model has been put in use effectively in numerous sectors including social work, public health, criminal and justice, agriculture, communication and marketing (LaMorte, 2019). Diffusion of Innovation has been used in public health to hasten the implementation of key public health projects characteristically geared towards a social system behavior change. Further the author states that the theory has limitations which include; a lot of the proof for the theory, as well as the consumer groups did not come from the public health sector. In addition, and the theory was not categorically established to apply to the adoption of new ideas or behaviors on public health inventions. The theory is seen not to foster an all-inclusive or hands-on approach to the adoption of public health programs. It was recorded that the theory works better with adoption of behaviors unlike a case of termination or prevention of behaviors. On the other hand, it is seen not to consider someone’s available means or social support in adopting change (or innovations).

2.2.2 The Disruptive Innovation Theory

The word disruptive innovation was first published in in the 1997 by Clayton in *'The Innovator's Dilemma'.* The professor of Harvard Business School Clayton, in his book scrutinized why some kind of innovations which are revolutionary in their nature secured the incumbent's position in a particular market conflicting to what preceding models like the Henderson – Clark model. In details, Clayton scrutinized lengthily the disk drive industry since it represents the utmost dynamic, technologically unpredictable and a very complicated industry that existed in the economy as at then.

Disruptive innovation creates a market where there is none hence increasing the financial performance of the organization (Julia, 2019). The author describes disruptive innovations as a theory which refers to an idea that puts in place a fresh value network either by joining an already prevailing market or by setting up a wholly new market. The author further describes sustaining innovations as the direct opposite of disruptive innovations which are found in the current market**.** Instead of setting up a new value network, sustaining innovation advances and develops the existing current ones by meeting the requirements of a consumer. Clayton, Michael and Rory, (2015) state that the word "disruption" defines a process where a minor company with less resources is capable of effectively challenging some well-known incumbent businesses in the market.

Disrupters build a market where none existed by turning non customers into customers. Entrants that demonstrate disruptive innovations start by successfully focusing on those ignored sectors. They focus to achieve a base by providing a more-suitable functionality to a product or service regularly at a way lesser cost (Clayton et al, 2015).

2.2.3 The Technology Acceptance Model (TAM)

The TAM describes behavior and adoption of technology by users through two particular theories which are perceived usefulness and simplicity in use. The theory suggests that perceptions attached to the innovation defines the extent of user acceptance (Seckin, 2016). Consumers will accept adoption of a new technology based on their assumption that they can use it with ease and that it will be useful.

Technology Acceptance Model (TAM), is among the majorly significant theory or models that explains technology acceptance by consumers, which have two main primary aspects influencing someone's intention to use new technology which are perceived ease of use and perceived usefulness (Neil & Walter, 2016). Perceived usefulness is described as the possible consumer's possibility that if they use a certain system, they will grow their actions while the perceived ease of use means is the degree to which a potential consumer presumes the system will be effortless, unproblematic or uncomplicated in operations (Davis, 1989). Regardless of TAM being a crucial basis for the context and framework in the research on the acceptance and use of technology, it also has a few short comings which includes the original reason for the model which is the extreme reluctance to spent resources and generality (Strong & Dishaw, 1999).

2.3 Determinants of Financial Performance

The performance of a firm can be measured using various performance measures, which are; net profits, return on assets (ROA) and Return on investment (ROI) (Richard, Devinney & Yip, 2009). ROI is a performance measure that measures the return on an investment in relation to the investment's cost as well as evaluate the efficiency of the investment. Considering the different

financial measures of performance among NGO's, efficiency in fundraising is the key variable that has been highly stated and underlined by many scholars (Mohammed & Elio, 2015). Efficiency in fundraising is the process that involves sourcing out for funds or resources for an NGO's survival (Andreasen & Kotler, 2008). The key measure for fundraising efficiency is by use of donor dependency ratio (Epstein & McFaralan, 2011).

The ration of resource generation is an alternative measure that is used to assess the efficiency in fundraising among NGO's (Lewis, 2009). Other form of measures for evaluating fundraising efficiency includes the amount used to raise funds and the rate of responses on fundraising proposals submitted. On the other hand, Niven (2008), states that despite the fact that efficiency in fundraising is the commonly correlated form of measure in assessing the financial performance of NGOs, some additional forms of measures are also factored in assessing the same. These kind of measures are related to the transparency of financial reporting of NGOs as suggested by the Standards for Charity Accountability of the Better Business Bureau Organization (2008). When an organization is financially transparent, it means that it makes available data and materials about their financial activities to the appropriate stakeholders.

NGO's are required to prepare and make available accurate, comprehensive, timely financial reports to its stakeholders and donors. Mohammed and Elio, (2015), summarized the performance of NGOs, to be, efficiency in fundraising, transparency in financial reporting, financial efficiency in programs or projects implementation, programs or projects non-financial efficiency, project outcomes performance (effectiveness), impact performance of a project, nature of partnerships and finally the quality in implementation. In relation to implementation of technology driven financial innovations, this study focused on the following financial innovations; product, process and institutional innovations.

2.4 Empirical Studies

An comparative analysis by Gerstenfield and Wortzel, (2007) on the association of internet-based innovation use and outcomes in 7302 financial settings in Europe, produced a strong correlation between the response and predictor factors. As such, the study deemed the technological innovation; internet-enabled or non- internet-enabled product, contributed to positive turnover and growth in employment. Additionally, it showed that higher profitability is mostly the result of the innovative activity of the firm.

In a study conducted by Grundiche, (2010), the author argued that for a firm to ensure that it remains competitive in a dynamic environment and achieve its set objectives of profitability, sales volume and market share, it must make efforts to continually improve products and product lines to satisfy customer wants and needs that keep changing. Kotler (2003), in his case study of the association between innovation and performance by examining Sony Company showed that the market shares for a front runner in innovations expanded significantly by way of offering many new products to clients. By extension, the tech-advancements led to production of superior products and processes in terms of quality and volume (Chesbough, 2010).

An innovation impact on companies' stability study by Nnanna, (2009) realized that "under favorable economic conditions companies with good leadership easily implement innovation and have favorable bottom line figures". As such, the leadership was responsible for setting favorable condition that spur innovation. Also, the investigations realized that employees' attitude to change and new systems also influenced the outcomes. The company culture in both private and public spaces dictated the personnel willingness to accept innovative solutions and systems which would translate to improved profits. The results for all the four companies studied therefore indicated innovation and company yield were positively associated.

A research on government's fiscal performance and innovation, by Mutie, (2018) realized that performance was significantly affected by systems development, digital tools and services, information technology driven innovations and interdepartmental process integration. The study further recommended the availability of funds for digitization and technological advancements.

In a study conducted by (Wachira, 2013) on technological innovations, on commercial banks, majority of the interviewees confirmed there is a progressive effect of technology driven innovations which included; convenience, ease of service access and consumer friendliness among others. The research established that customers and staffs working with the banks appreciated technology driven innovations. The outcomes also discovered that there is a correlation and noteworthy connection between the banks' performance in relation to profitability as well as acceptance of the different technology driven innovations including; customer assisted technology customer independent technology and customer transparent technology. The research highlighted the importance for commercial banks to unceasingly allocate budgets on technology driven innovations so that they can be competitive in the banking industry.

The systems and processes study on Total Quality Management (TQM) Practices and ICT adoption by non-profit institutions in Nairobi by Chalinga, (2019) established a weak link between the factors among the related institutions that had adopted the systems in their operational practices.

As such, the TQM practices and ICT adoption do not influence the performance of the associated firms because of change resistance, selective implementation, limited resources and low capacity among personnel.

A meta-analysis of the financial intermediation theory, innovation diffusion theory and Silber constraints theory of Financial Innovation by Wanalo (2018), realized a serious death on literature on the technologies of finances and thus the study. The investigations looked in to different theories and establish whether the different types of innovations have influence to prudence in financial operations of the non-profit institutions in Nairobi.

Kiggina (208) also performed an examinations study on NGOs in Nairobi, measuring how performance is influenced by innovation. The investigations realized that the adoption of technological advancements such as product innovation, process innovation, market innovation and information technology innovation, enhanced MSEs' competitiveness. This meant that the adoption of technological innovation resulted to better firm performance among the MSE's in the industry.

The limitations of studies on financial innovations and NGOs' performance are revealed by the literature reviewed of (Chalinga, 2019), (Mutie, 2018) and (Wachira, 2013), and empirical investigations discussed above. As a result, the purpose of this investigations was to explore the impact of technology-driven financial innovations on NGOs' effective profitability in Nairobi County.

2.5 Conceptual Framework

The key concepts in the study and connecting variables are diagrammatically presented below.

INDEPENDENT VARIABLES **DEPENDENT VARIABLE**

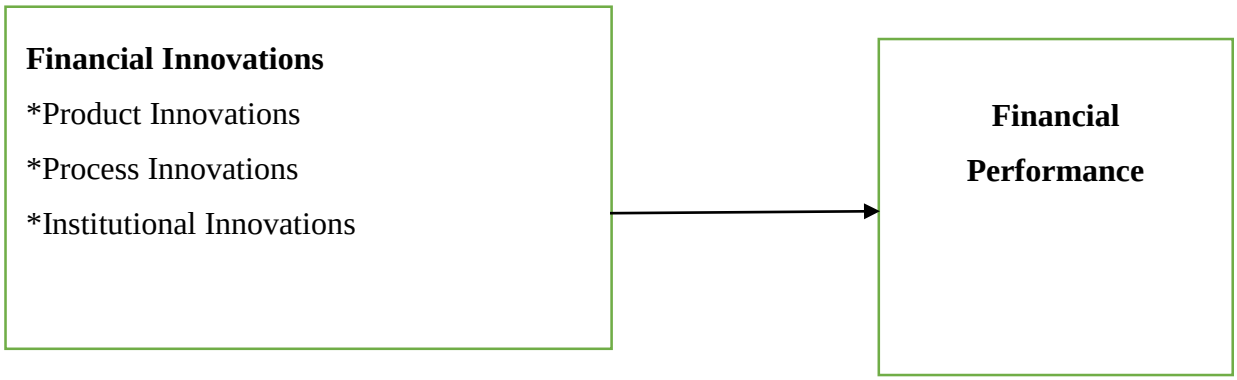

Figure 2.1: Conceptual Framework of the Study

Source: Author, 2021

The figure 2.1 shows the predicting variables in terms of product innovation, process innovation and institutional innovation while the responding variable as financial performance of the NGOs in the health sector, indicated as return on investment. This information was collected using a secondary data collection tool, which included data for the last five years (2016-2020) of these NGOs.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The research process was discussed in terms of the design, sample, target population, data collection, and analysis methodologies used in the investigations in this chapter.

3.2 Research Design

A set of methodologies and processes that determine the variables in a research study is referred to as a research design. A cross-sectional descriptive design was adopted in the investigation. In this study, gathering of data and afterwards organizing the same, formulating the data, representation of the data, and finally the interpretation of the same was carried out. As per the research by (Cooper & Schindler, 2006), they defined a descriptive research as a study design that looks to represent the status quo of a research or study items. Descriptive researches depict the variables by providing answers to who, what, and how kind of queries. The importance of choosing a descriptive design is that it involves data collection without affecting the natural settings (Mugenda & Mugenda, 2003). A descriptive design pursues to describe patterns while describing situations in the past and referencing that same to the current and future.

3.3 Population

A population is a group of elements that make up main basis of a research investigation. According to (Chalinga, 2019), the Nairobi City County NGO Coordination Board had listed 1033 entities within their jurisdiction as of the end of 2019. Approximately 113 non-profit entities concentrated their efforts on the health sector.

3.4 Sample Design

This is the demographic slice that is selected for data collection in order to reflect the entire population. It is recomended that a prudent sample size that is adequate for providing inferences about the total target population is approximately between the range of 10% - 30% (Mugenda & Mugenda, 2003). This study targeted 30% of the 113 health NGOs registered in Nairobi, which gave a sample of 34 health-sector NGOs.

3.5 Data Collection

The secondary data records of the last 5 years: 2016 to 2020, of the NGOs was collected to form a panel data set that can make inference to financial performance of the organization. This was deemed a suitable period as the financial innovations had taken place tremendously during that time. Data from secondary sources was collected on the availability of the three innovations and the return on investments of the focus entities, whose information was collected on their websites, annual reports, audited and published financial statements.

3.6 Data Analysis

The generated facts was analyzed, translated, and reported using summary statistics of mean and standard deviation. The quantitative analysis in the research was done using the SPSS (Statistical Package for Social Sciences) application. The study also used inferential statistics to investigate the effect of the independent factors on the dependent variables using a multiple regression model, as shown in the formula below. This was done to see if the dependent variable and the three independent variables had any correlation.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$

Where:

Y = is the dependent variable representing financial performance which is measured by ROI.

β_0 = is a constant beta factor, the value of Y when all Xs are zero

$\beta_1 - \beta_{3=}$ Beta regression coefficients

X_1 = is the variable representing product innovation

X_2 = is the variable representing process innovation

X_3 = is the variable representing institutional innovation

μ= Term of error accounting for all other financial innovations not represented in the model.

Table 3.1: Summary of Operationalization of Research Variables.

No.	Variable name	Nature of variable	Variable indicators and Measurement	Data collection method	Type of analysis	Level of analysis
1.	Financial performance	Dependent	Return on investment.	Secondary data collection sheet	Quantitative	Correlation analysis Regression analysis
2.	Product innovation	Independent	Adoption of Dashboards Adoption of Biometric systems Adoption of Mobile apps	Secondary data collection sheet	Quantitative	Frequencies Correlation analysis Regression analysis
3.	Process innovation	Independent	Adoption of ERP systems Adoption of Mobile money transfer Adoption of Online banking	Secondary data collection sheet	Quantitative	Frequencies Correlation analysis Regression analysis
4.	Institutional innovation	Independent	Adoption of Automation of customer service Adoption of Integration with e-government platforms Adoption of crowd funding platforms	Secondary data collection sheet	Quantitative	Frequencies Correlation analysis Regression analysis

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS.

4.1 Introduction

This chapter presents the results generated from the sampled dataset of 34 non-profit institutions within the periods of 2016 to 2020, in terms of analysis, interpretations and discussion in relation to the financial innovations adopted by these institutions.

4.2 Financial innovations by NGOs in the Health-sector in Nairobi, Kenya

The section covers the various innovation tools including product innovations, process innovations and institutional innovations, adopted by the related firms.

4.2.1 Product Innovations

The summary table 4.2 presents the frequencies and percentages of the NGOs that adopted the innovations.

Table 4.2: Product Innovations

	N	Frequency	Percentage	Mean	Standard Deviation
Dash boards	34	29	85.3%	1.15	0.359
Biometric systems	34	22	64.7%	1.65	0.485
Mobile apps	34	27	79.4%	3.21	0.410
Valid N (list wise)	34			6.01	0.410

Source: Study data, 2021

The study shows that the NGOs categorized in the health sector embrace product innovation. The study indicates that 29 NGOs who represent 85.3% of the total use dashboards. The study data shows that 22 out of the 34 NGOs, who represent 64.7% of the total indicated to use biometric systems while 27 NGOs who represent 79.4% of the total indicated that mobile apps are in use in the organizations. The overall mean was 6.01 and overall standard deviation was 0.410 as indicated from the data collected from the institutions. Use of dashboards, biometric systems and mobile apps produced a mean and standard deviations of 1.15, 0.359; 1.65, 0.485 and 3.21, 0.410 respectively.

The figure below represents the percentages of the adoption of product innovations in the health sector NGOs.

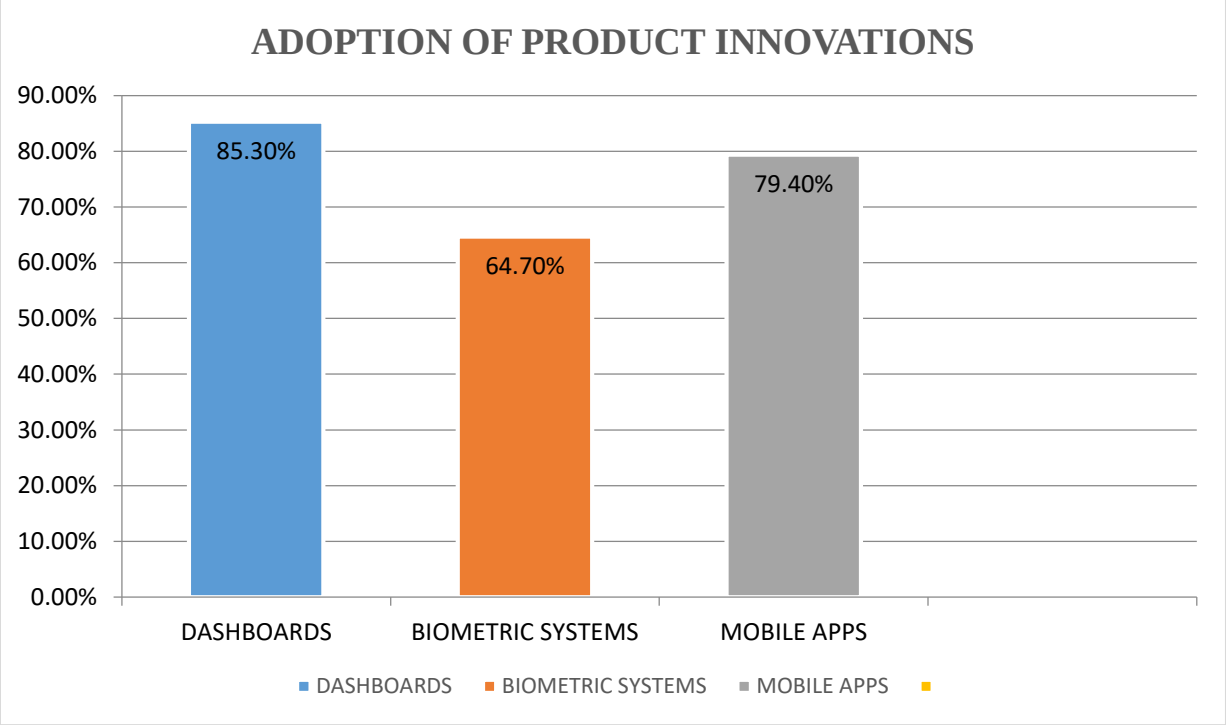

Figure 4.2: Adoption of product innovations

Source: Author, 2021

4.2.2 Process Innovations

The technologies considered were ERP systems, mobile money transfer and online banking. The frequencies and percentages of outcomes are tabled in 4.3 below.

Table 4.3: Process Innovations

	N	Frequency	Percentage	Mean	Standard Deviation
ERP Systems	34	29	85.3%	4.15	0.359
Mobile money transfer	34	22	64.7%	5.35	0.485
Online banking	34	30	88.2%	6.12	0.327
Valid N (list wise)	34			15.62	0.390

Source: Study data, 2021

The table above shows the frequencies and percentages of the NGOs which have adopted the three types of process innovations and the means and standard deviations of the innovations are also presented. The study data indicated that 29 out of 34 health-sector NGOs have adopted the use of ERP systems, representing 85.3% of the total NGOs that were under study. 22 NGOs out of the 34 indicated to have adopted mobile money transfer, representing 64.7% of the total health sector NGOs under this study. The data also indicated that 88.2% of the total NGOs, which were 30 out of the 34 NGOs under study have embraced the use of online banking. In addition to the frequencies and the percentages, the overall mean was calculated to be 15.62 and the overall standard deviation as 0.390. The adoption of ERP systems, Mobile money, and Online banking produced the means and standard deviations as 4.15, 0.359; 5.45, 0.504; and 6.12, 0.327. The

figure below shows the adoption of process innovation in the health sector NGOs in Nairobi County, Kenya.

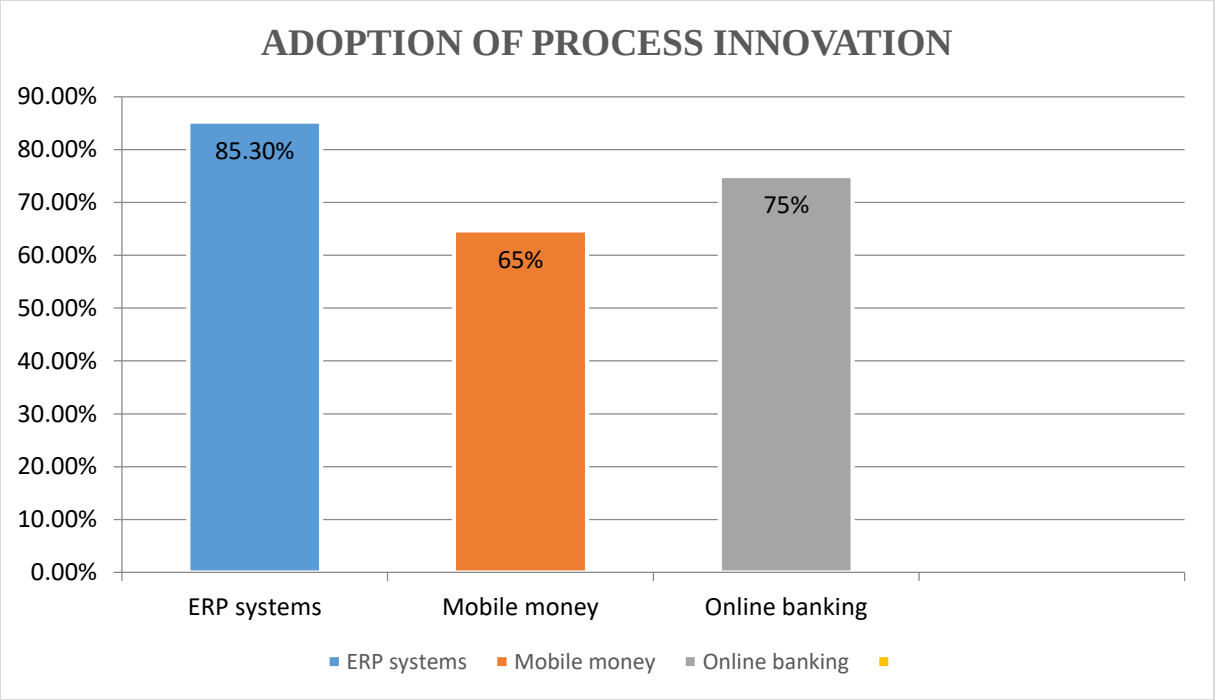

Figure 4.3: Adoption of process innovation

Source: Author, 2021

4.2.3 Institutional Innovations

The investigations focused on the innovations of automation of customer service. This is done through providing online platforms through which customers could provide their feedback and raise their concerns with regards to the services being provided. Integration with e-government platforms was another institutional innovation which was incorporated in this study. This is where the government provides a platform where these NGOs share their information, activities and funding so as to promote accountability and transparency. Use of crowd funding platforms are institutional innovations that were considered in this study, where NGOs use online platforms to

raise funds from the public so that they are able to fund their projects. The generated outcomes are presented in the table 4.4.

Table 4.4: Institutional Innovations

	N	Frequency	Percentage	Mean	Standard Deviation
Automation of customer service	34	29	85.3%	7.15	0.359
Integration with e-government platforms.	34	32	94.2%	8.06	0.239
Use of crowd funding platforms	34	29	85.3%	9.15	0.359
Valid N (list wise)	34			24.36	0.319

Source: Study data, 2021

The frequencies and the percentages of the NGOs in the health sector in Nairobi County who adopted the institutional innovations as indicated above were analyzed. The NGOs that adopted automation of customer service were a total of 29 organizations representing 72.5% of the total NGOs under this study. NGOs that partnered with the Government through integration with e-government platforms were 32 out of the 34 organizations under study, which represented 80% of the total. NGOs that used crowd funding platforms were 29, representing 72.5% of the total NGOs that were sampled in this study. The overall mean of institutional innovations was 24.36 while standard deviation was 0.319. The means and standard deviations of the particular attributes such as automation of customer services, Partnerships with the government through integration with e-government platforms and Use of crowd funding platforms were 7.15, 0.359; 8.06, 0.239; and

9.15, 0.359. The results of adoption of institutional innovations in the health sector NGOs are displayed in figure 4.4.

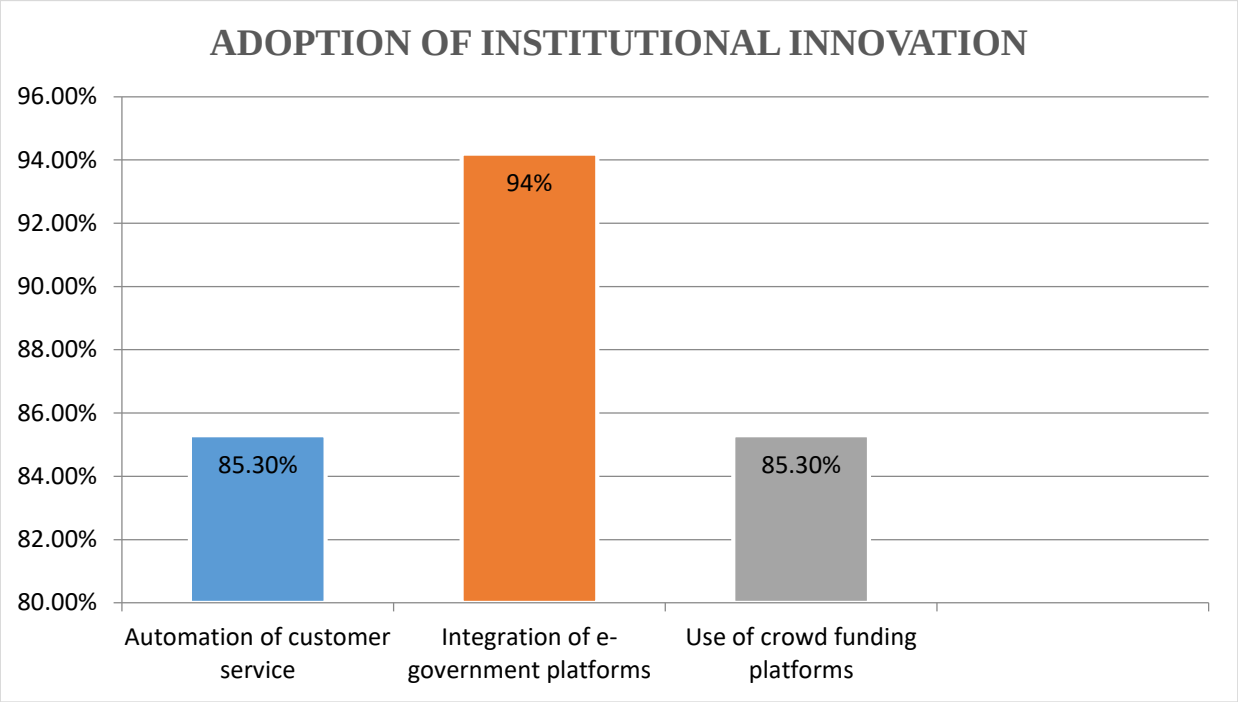

Figure 4.4: Adoption of institutional innovation

Source: Author, 2021

4.3 Nature and Relationship between Product innovation, Process innovation, Institutional innovation and ROI of NGOs in the Health Sector in Nairobi County

In order to determine the nature and the strength of the relationship between the independent variables; financial innovations a4nd the dependent variable; financial performance analyses were carried out. Correlation analysis which was proposed by Karl Pearson and multiple linear regression analysis were carried out.

4.3.1 Correlation Analysis

The results presented in table 4.4 show the correlation values between the financial innovations and financial performance of the non-profit units.

Table 4.5: Correlation Matrix

Karl Pearson's Correlations				
	Return on Investment	**Product innovation**	**Process innovation**	**Institutional innovation**
Return on Investment	1			
Product innovation	0.293**	1		
Process innovation	0.793**	0.488**	1	
Institutional innovation	0.610**	0.748**	0.898**	1
****. Correlation is significant at the 0.01 level (2-tailed).**				

Source: Study data, 2021

The correlation value between the metric of return on investment and product innovation is 0.293, showing that the two have a substantial link. The correlation between profitability and process innovation is 0.793, indicating a positive and substantial relationship. The correlation coefficient between return on investment and institutional innovation is 0.610, which is positive and close to +1, indicating a substantial relationship between the two. Therefore, the three independent variables; process innovation, product innovation and institutional innovation are considered to be

positively and significant towards predicting and measuring financial performance, measured by return on investment.

4.3.2 Multiple Linear Regression Analysis

A multiple linear regression analysis was carried out by the help of a linear regression model to determine and explain the link between financial innovations and financial performance. The model summary, analysis of variance and coefficients are as displayed and explained below.

Table 4.6: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.828[a]	0.685	0.654	29.28755
a. Predictors: (Constant), Institutional innovation, Product innovation, Process innovation				

Source: Author, 2021

The model summary show that the value of R: correlation coefficient, is 0.828, thus the model is of high correlation between the predictor and response variables The R Square: the coefficient of determination is 0.685, meaning the model's three predictor parameters explains 68.5% of the variations of the return on investment of the related NGOs. As such, other innovations factors not included in this study contribute 31.5% towards the changes in the return on investment.

Table 4.7: Analysis of Variance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56079.689	3	18693.230	21.793	.000[b]
	Residual	25732.811	30	857.760		
	Total	81812.500	33			

Source: Author, 2021

The ANOVA summary table produced the F value of 21.793 (p-vlaue=0.000, df=3,), showing that the model was of best fit in explaining the variation in the dependent variable.

Table 4.8 presents the regression model's statistics.

Table 4.8: Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t-value	Sig.
(Constant)	-262.109		-1.027	0.000
Product innovation	-10.145	-0.112	-0.566	0.075
Process innovation	56.876	1.160	3.882	0.001
Institutional innovation	-19.619	-0.348	-0.887	0.593
a. Dependent Variable: Return on Investment				

Source: Study data, 2021

The coefficients in the table above were fitted into the regression model and now reads as follows: Financial Performance =-262.109 + -10.145X_1 + 56.876X_2 + -19.619X_3 + Ɛ.

The constant term, β_0, with a value of -262.109 implies that before the variables under the study were implemented, financial performance was at a negative value and the organizations had not reached or passed the breakeven point. The constant term also implies that at zero product innovation, the predictor variables performs at -262.109 units. Process innovation with a value of 56.876 units and a p value of 0.001 (<0.05) meaning that this independent variable is significant towards predicting financial performance. One unit change in process innovation implies an increase of financial performance by 56.876 units. Product innovation with a value of -10.145 and a significant value of 0.075 which is more than the conventional p value of 0.05 contributes negatively and insignificantly towards financial performance. One unit change in product innovation leads to a -10.145 decrease in the return on investment. With a score of -19.619 (p-value = 0.593), institutional innovations has a negative and minor impact on return on investment. One unit change in institutional innovation will lead to a -19.619 decrease in the ROI of the NGOs in the health sector in Nairobi County. This therefore infers that process innovation contributes positively towards ROI while product and institutional innovation contributes negatively to the ROI of the NGOs in the health sector in Nairobi County, Kenya.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The section discussed the summary, as well as conclusions, limitations and recommendations, as guided by the study results.

5.2 Summary of Findings

In general, the NGOs aiding the health services provision have adopted various innovations so as to enhance their financial performanc. These innovations are the product, process and institutional innovations which were adopted by the organizations, relied on them and showed a significant improvement in their return on investment.

5.2.1 Product innovation and Financial Performance

The study indicated that 29 NGOs who represent 85.3% of the total use dashboards. The study data shows that 15 out of the 34 NGOs, who represent 64.7% of the total indicated to use biometric systems while 27 NGOs who represent 79.4% of the total indicated that mobile apps are in use in the organizations. The overall mean was 6.01 and overall standard deviation was 0.410. Other results produced were; Use of dashboards (mean =1.15, Std Dev= 0.359), biometric systems (mean=1.65, Std dev=0.48) and use of mobile apps (mean= 3.21, Standard deviation= 0.410).

The findings of the study also showed that the relationship between the dependent variable; return on investments and product innovation is a correlation value of 0.293 at a 95% confidence level. This indicated a positive and statistically significant value and therefore displaying a strong relationship between the two. The results also displayed a value of 0.654 which was a coefficient of multiple determination, adjusted R Square. This explains that product innovation could explain 65.4% of the fluctuations in financial performance, measured by ROI. This means that an increase

in product innovation increases the financial performance of the NGOs in the health sector in Nairobi County. The study results also revealed that the F value was 21.793 with degrees of freedom (3, 33) with a p value less than 0.05 which supports the goodness of fit of the model in the study. This also indicates that product innovation is a good predictor of financial performance of the health sector NGOs in Nairobi County.

5.2.2 Process innovation and Financial Performance

The study data indicated that 29 out of 34 health-sector NGOs have adopted the use of ERP systems, representing 85.3% of the total NGOs that were under study. 22 NGOs out of the 34 indicated to have adopted mobile money transfer, representing 64.7% of the total health sector NGOs under this study. The data also indicated that 88.2% of the total NGOs, which were 30 out of the 34 NGOs under study have embraced the use of online banking. The overall mean and standard deviation was 15.62 and 0.390 respectively. Adoption of ERP systems (mean = 4.15, standard deviation = 0.359), Mobile money transfer by NGOs (mean=5.35, standard deviation= 0.485), and Online banking (mean=6.12, standard deviation=0.327) were the outcomes of the relevant parameters.

The level of strength between return on investment and process innovation was 0.793, showing a positive and strong relationship between the two variables. The study also found a coefficient of multiple determination of 0.654, implying that process innovation may account for 65.4 percent of changes in the financial performance of the NGOs studied as assessed by ROI. The F test gave a value of 21.793 with degrees of freedom (3, 33), $p < 0.05$, which supports the goodness of fit of the model used. This also means that process innovation is a significant predictor of financial performance of the health sector NGOs in Nairobi County.

5.2.3 Institutional innovation and Financial Performance

The NGOs that automated customer services were a total of 29 organizations representing 85.3% of the total NGOs under this study. NGOs that partnered with the Government through integration with e-government platforms were 32 out of the 34 organizations under study, which represented 94.2% of the total. NGOs that used crowd funding platforms were 29, representing 85.3% of the total NGOs that were sampled in this study. The summary statistics produced an overall mean for the factor: institutional innovations (mean=24.36, SD=0.319); NGOs that automated customer services (mean=7.15 and SD=0.359); Partnerships with the government through integration with e-government platforms (mean = 8.06, SD=0.239); the use of crowd funding platforms (mean=9.15, SD=0.359).

The correlation coefficient value between return on investment and institutional innovation was found to be 0.610, which is a positive value and also close to +1, signifying a strong and significant relationship between the two. The study data further revealed the adjusted R Square also known as the coefficient of multiple determination where, the individual independent variables could predict changes in the dependent variable. Therefore, a value of 0.654 illustrates that institutional innovation could explain 65.4% of the changes in the financial performance of NGOs in the health sector in Nairobi County. This means that institutional innovation is an important predictor of financial performance of the health sector NGOs in Nairobi County.

5.3 Conclusions

The adoption of diverse tools of innovation which embrace the dynamism of technology and changes in the workplaces had positive and substantial impact on the overall fiscal outcomes of NGOs. It is therefore worthy to conclude that financial innovations embraced by the health sector NGOs have led to the improved financial and overall performance of these institutions and

therefore should be adopted widely to bring about efficiency and sustainable competitive advantage.

In regards to product innovation, the investigations observed a positive and statistically relevant association with finances of related NGOs within Nairobi County, indicating that an increase in product innovation, would likely enhance financial performance.

Basing on process innovation, it can be concluded that there is a positive and statistically significant relationship towards the financial performance of the NGOs in the health sector in Nairobi County, which was measured using ROI. This therefore means that with the increase in product innovation, there is a notable and worthy increase in the financial performance of the health sector NGOs in Nairobi County.

It can also be concluded that there is a positive and statistically significant relationship between institutional innovation and financial performance of the NGOs in the health sector in Nairobi County. This means that there is a notable and evident increase in the financial outcomes of the healthcare NGOs in Nairobi County with the increase in institutional innovation.

5.4 Recommendations

This study recommends that NGOs should put in place appropriate innovations which would bring about exemplary performance as well as efficient delivery of services and information. These innovations have proved to be beneficial and these institutions should make sure that they adopt them fully so as to reach a wider base of customers, keep up with the changes in technology and the environment and also boost their competitive advantage which would turn out to be sustainable.

More funding should be put in place so as to support such kinds of innovations because such changes in an institution could be costly to source, install and maintain.

The management of the NGOs should put in place strategies which would benefit these institutions. This should be greatly inclined towards innovations and policies which support them and see their implementation and sustainability. Effective formulation and implementation of such innovation strategies which embrace the dynamisms of technology would yield better results of the institutions, and be of standards as per those of global institutions.

The government which acts through the NGOs Co-ordination Board should put across standard measures which would make sure that these institutions are operating at an optimum level and adhere to high standards. This would ensure that provision of services and activities undertaken by the NGOs are of the required standards and adopt best practices; and this would be supported majorly by innovations of different kinds.

5.5. Limitations of the Study

The study had time limitations in that the secondary data used covered only the periods of 2016 to 2020. This period of time is rather short and a similar study which would incorporate more years would yield different results. Another challenge faced during the study was the acquiring of the financial information of the NGOs, which most of them were not published online and required physical visits to get them. This was faced with resistance by some of the institutions as the fear of the information being publicly known was experienced. Some were not as confident as this information would be used by other organizations to compete with them and judge them according to their performance. The researcher maintained confidentiality of the responses and only used the data for academic goals.

5.6 Suggestions for Further Research

The study established that the NGOs in the health sector which represented the health NGOs in Nairobi and in Kenya at large have widely embraced innovations that are in collaboration with technology and the dynamisms of the environments. These innovations have proven to be beneficial to the performance of the institutions and brought about efficiency in service delivery. Therefore, this study recommends that there should be a wider exploration of other innovations adopted by the NGOs so as to evaluate them against performance. More studies should be done also on NGOs of other sectors so as to assess what kind of innovations they adopt and if these factors affect their performance in any way. Research should also be done on NGOs outside Nairobi County to evaluate if those institutions in other counties embrace the same innovations and if different factors affect their adoption and the success of the innovations.

The study adopted a panel data study which only involved collection of secondary data of 30% of the total health sector NGOs in Nairobi County, which involved only 34 institutions. More studies could also be done through collection of primary data to collect the sentiments of the staff who work at these NGOs to get a more personal view of how these innovations have impacted the performance of the institutions and the level of efficiency brought about by the innovations. In addition, further studies could expand the scope and cover other NGOs on the diverse sectors including economic, social and industrial performance related metrics.

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APPENDIX I: SECONDARY DATA COLLECTION TOOL

Name of NGO	**ROI**				
	2016	**2017**	**2018**	**2019**	**2020**

HEALTH SECTOR NGOs	**FINANCIAL INNOVATIONS**		**2016**	**2017**	**2018**	**2019**	**2020**
	Product Innovation	Dashboards					
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System					
		Mobile Money Transfer					
		Online Banking					
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms					
		Use of crowd funding platforms					

APPENDIX II: LIST OF SAMPLED HEALTH NGOs IN NAIROBI COUNTY.

A Global Healthcare Public Foundation	Family Life Promotion and Services
Africa Health Information Channel	Global Health Action
Africa Family Health	Global Deaf Connection Kenya
Action Africa Help Kenya	Health Ngo's Network
African Mental Health Research and Training	Heart Alive Foundation
Afya Research Africa	Ima World Health
Agency for Disability and Development in Africa	Intrahealth International
Amref Health Africa in Kenya	International Center for Reproductive Health
Association for the Physically Disabled	Kenya NGO Alliance against Malaria
Action Against Hunger	Kenyan Heart National Foundation
Baylor college of medicine children's foundation-Kenya	Kenya Community Based Health Financing Associations
Cancer Research and Communications Organization	Kenya Water for Health
Center for Health Solutions- Kenya	Kenya Aids NGOs Consortium
Consortium for National Health Research	Lcvt Health
Engender Health Ltd	Medicins Sans Frontieres
Family Health Options	Population Services Kenya
Family Health International 360	Planned Parenthood Global Africa Regional Office (PPG/ARO)

Source: NGO Co-ordination Board, 2020

APPENDIX III: RETURN ON INVESTMENTS OF THE NGOS UNDER STUDY

		RETURN ON INVESTMENT				
	HEALTH SECTOR NGOs	**2016**	**2017**	**2018**	**2019**	**2020**
1.	**A Global Healthcare Public Foundation**	**4.02%**	**7.23%**	**5.53%**	**3.33%**	**4.53%**
2.	**Africa Health Information Channel**	**6.21%**	**7.45%**	**5.55%**	**9.21%**	**8%**
3.	**Africa Family Health**	**10.01%**	**9%**	**9.7%**	**8.88%**	**6.22%**
4.	**Action Africa Help Kenya**	**3.98%**	**3.78%**	**7.24%**	**4.55%**	**3.91%**
5.	**African Mental Health Research and Training**	**6.77%**	**7.98%**	**5%**	**6.22%**	**5.89%**
6.	**Afya Research Africa**	**6.27%**	**7.12%**	**7.44%**	**6.45%**	**6.12%**
7.	**Agency for Disability and Development in Africa**	**2.44%**	**4.89%**	**6.13%**	**5.67%**	**4.58%**
8.	**Amref Health Africa in Kenya**	**9.85%**	**3.33%**	**3.57%**	**4.03%**	**19.58%**
9.	**Association for the Physically Disabled**	**7.47%**	**6.12%**	**5.64%**	**9.45%**	**5.03%**
10.	**Action Against Hunger**	**5.36%**	**3.85%**	**5.24%**	**3.88%**	**5.67%**
11.	**Baylor college of medicine children's foundation-Kenya.**	**7.55%**	**6.54%**	**8.11%**	**7.36%**	**5.55%**
12.	**Cancer Research and Communications Organization**	**4.43%**	**6.32%**	**6.91%**	**7.55%**	**8.6%**
13.	**Center for Health Solutions- Kenya**	**5.37%**	**4.69%**	**3.18%**	**7.78%**	**6.29%**
14.	**Consortium for National Health Research**	**4.09%**	**7.33%**	**8.28%**	**6.55%**	**5.29%**
15.	**Engender Health Ltd**	**7.33%**	**8.34%**	**9.5%**	**9.23%**	**7.55%**
16.	**Family Health Options**	**7.75%**	**5.37%**	**6.67%**	**6.46%**	**5.57%**

17.	**Family Health International 360**	**4.17%**	**4.67%**	**5.83%**	**6.26%**	**5.32%**
18.	**Family Life Promotion and Services**	**8.11%**	**7.58%**	**7.32%**	**6.98%**	**5.03%**
19.	**Global Health Action**	**7.2%**	**6.28%**	**6.4%**	**5.23%**	**6.71%**
20.	**Global Deaf Connection Kenya**	**4.91%**	**6.31%**	**5.74%**	**7.62%**	**6.64%**
21.	**Health Ngo's Network**	**8.13%**	**8.29%**	**7.95%**	**8.62%**	**4.91%**
22.	**Heart Alive Foundation**	**6.18%**	**6.03%**	**5.32%**	**4.97%**	**5.55%**
23.	**Ima World Health**	**4.54%**	**4.2%**	**5.67%**	**6.89%**	**4.55%**
24.	**Intrahealth International**	**5.4%**	**3.33%**	**6.77%**	**8.46%**	**7.25%**
25.	**International Center for Reproductive Health**	**3.7%**	**2.3%**	**4.11%**	**7.33%**	**6.89%**
26.	**Kenya NGO Alliance against malaria**	**12.4%**	**11.6%**	**9.34%**	**9.09%**	**8.46%**
27.	**Kenya Heart National Foundation**	**5.97%**	**6.85%**	**4.86%**	**6.03%**	**7.12%**
28.	**Kenya Community Based Health Financing Associations**	**7.9%**	**8.1%**	**8.21%**	**8.91%**	**7.67%**
29.	**Kenya Water for Health**	**5.76%**	**6.93%**	**7.72%**	**6.45%**	**8.81%**
30.	**Kenya Aids NGOs Consortium**	**14.45%**	**16.55%**	**18.19%**	**17.30%**	**17.03%**
31.	**LVCT Health**	**18.08%**	**17.56%**	**12.84%**	**14.29%**	**16.29%**
32.	**Medicins Sans Frontieres**	**5.88%**	**6.10%**	**6.89%**	**9.07%**	**7.90%**
33.	**Population Services Kenya**	**8.97%**	**5.33%**	**5.69%**	**6.89%**	**8.45%**
34.	**Planned Parenthood Global Africa Regional Office (PPG/ARO)**	**9.11%**	**6.98%**	**6.48%**	**5.29%**	**6.26%**

Source: NGOs Annual Financial Statements (2016, 2017, 2018, 2019 and 2020)

APPENDIX IV: ADOPTION OF FINANCIAL INNOVATIONS IN THE NGOS UNDER STUDY

HEALTH SECTOR NGOs	FINANCIAL INNOVATIONS		2016	2017	2018	2019	2020
1. A Global Healthcare Public Foundation	**Product Innovation**	Dashboards			√		
		Biometric Systems					
		Mobile App		√			
	Process Innovation	ERP System			√		
		Mobile Money Transfer		√			
		Online Banking		√			
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
2. Africa Health Information Channel	**Product Innovation**	Dashboards		√			
		Biometric Systems				√	
		Mobile App					
	Process Innovation	ERP System			√		
		Mobile Money Transfer		√			
		Online Banking	√				
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms		√			
		Use of crowd funding platforms					
	Product Innovation	Dashboards	√				

3. Africa Family Health		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System		√			
		Mobile Money Transfer	√				
		Online Banking		√			
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
4. Action Africa Help Kenya	**Product Innovation**	Dashboards			√		
		Biometric Systems				√	
		Mobile App				√	
	Process Innovation	ERP System			√		
		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms		√			
		Use of crowd funding platforms			√		
5. African Mental Health Research and Training	**Product Innovation**	Dashboards		√			
		Biometric Systems					
		Mobile App		√			
	Process Innovation	ERP System			√		
		Mobile Money Transfer					

		Online Banking		√			
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms		√			
		Use of crowd funding platforms					
6. Afya Research Africa	**Product Innovation**	Dashboards			√		
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System			√		
		Mobile Money Transfer		√			
		Online Banking	√				
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms					
		Use of crowd funding platforms			√		
7. Agency for Disability and Development in Africa	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System			√		
		Mobile Money Transfer					
		Online Banking					
		Automation of customer service		√			

	Institutional Innovation	Integration with e-government platforms			√		
		Use of crowd funding platforms			√		
8. Amref Health Africa in Kenya	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App				√	
	Process Innovation	ERP System	√				
		Mobile Money Transfer	√				
		Online Banking		√			
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms			√		
		Use of crowd funding platforms		√			
9. Association for the Physically Disabled	**Product Innovation**	Dashboards			√		
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System	√				
		Mobile Money Transfer			√		
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms		√			
		Use of crowd funding platforms		√			

10. Action Against Hunger	**Product Innovation**	Dashboards				√	
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking		√			
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms		√			
		Use of crowd funding platforms			√		
11. Baylor college of medicine children's foundation-Kenya	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App					
	Process Innovation	ERP System	√				
		Mobile Money Transfer					
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
12. Cancer Research and Communicati	**Product Innovation**	Dashboards			√		
		Biometric Systems			√		

ons Organization		Mobile App				√	
	Process Innovation	ERP System	√				
		Mobile Money Transfer					
		Online Banking	√				
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
13. Center for Health Solutions Kenya	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App				√	
	Process Innovation	ERP System					
		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms	√				
		Use of crowd funding platforms	√				
14. Consortium for National Health Research	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App				√	
	Process Innovation	ERP System	√				

		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms		√			
		Use of crowd funding platforms					
15. Engender Health Ltd	**Product Innovation**	Dashboards					
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
16. Family Health Options	**Product Innovation**	Dashboards					
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System		√			
		Mobile Money Transfer			√		
		Online Banking					

	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms			√		
		Use of crowd funding platforms		√			
17. Family Health International 360	**Product Innovation**	Dashboards					
		Biometric Systems			√		
		Mobile App					
	Process Innovation	ERP System		√			
		Mobile Money Transfer			√		
		Online Banking	√				
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms					
		Use of crowd funding platforms					
18. Family Life Promotion and Services	**Product Innovation**	Dashboards					
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System		√			
		Mobile Money Transfer					
		Online Banking		√			
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		

		Use of crowd funding platforms					
19. Global Health Action	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App				√	
	Process Innovation	ERP System		√			
		Mobile Money Transfer			√		
		Online Banking	√				
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms		√			
		Use of crowd funding platforms					
20. Global Deaf Connection Kenya	**Product Innovation**	Dashboards					√
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System	√				
		Mobile Money Transfer	√				
		Online Banking					
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms		√			
		Use of crowd funding platforms			√		
21. Health Ngo's Network	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		

		Mobile App				√	
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking	√				
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms		√			
		Use of crowd funding platforms			√		
22. Heart Alive Foundation	**Product Innovation**	Dashboards			√		
		Biometric Systems				√	
		Mobile App					
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking		√			
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
23. Ima World Health	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App				√	
	Process Innovation	ERP System	√				

		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms			√		
24. Intrahealth International	**Product Innovation**	Dashboards			√		
		Biometric Systems					
		Mobile App				√	
	Process Innovation	ERP System	√				
		Mobile Money Transfer	√				
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms			√		
25. International Center for Reproductive Health	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System					
		Mobile Money Transfer					
		Online Banking					

	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
26. Kenya NGO Alliance against malaria	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking		√			
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms			√		
		Use of crowd funding platforms		√			
27. Kenya Heart National Foundation	**Product Innovation**	Dashboards				√	
		Biometric Systems			√		
		Mobile App			√		
	Process Innovation	ERP System					
		Mobile Money Transfer					
		Online Banking	√				
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms			√		
		Use of crowd funding platforms		√			

28. Kenya Community Based Health Financing Associations	**Product Innovation**	Dashboards				√	
		Biometric Systems					
		Mobile App					
	Process Innovation	ERP System		√			
		Mobile Money Transfer	√				
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms			√		
		Use of crowd funding platforms					
29. Kenya Water for Health	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App				√	
	Process Innovation	ERP System		√			
		Mobile Money Transfer		√			
		Online Banking					
	Institutional Innovation	Automation of customer service		√			
		Integration with e-government platforms					
		Use of crowd funding platforms			√		
30. Kenya AIDS NGOs Consortium	**Product Innovation**	Dashboards		√			
		Biometric Systems			√		

		Mobile App					
	Process Innovation	ERP System	√				
		Mobile Money Transfer		√			
		Online Banking	√				
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms					
		Use of crowd funding platforms					
31. LVCT Health	**Product Innovation**	Dashboards	√				
		Biometric Systems					
		Mobile App			√		
	Process Innovation	ERP System	√				
		Mobile Money Transfer	√				
		Online Banking		√			
	Institutional Innovation	Automation of customer service	√				
		Integration with e-government platforms	√				
		Use of crowd funding platforms	√				
32. Medicins Sans Frontieres	**Product Innovation**	Dashboards	√				
		Biometric Systems			√		
		Mobile App				√	
	Process Innovation	ERP System					
		Mobile Money Transfer					

		Online Banking		√			
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms					
		Use of crowd funding platforms					
33. Population Services Kenya.	**Product Innovation**	Dashboards		√			
		Biometric Systems			√		
		Mobile App					√
	Process Innovation	ERP System	√				
		Mobile Money Transfer	√				
		Online Banking					
	Institutional Innovation	Automation of customer service	√			√	
		Integration with e-government platforms			√		
		Use of crowd funding platforms	√				
34. Planned Parenthood Global Africa Regional Office	**Product Innovation**	Dashboards					
		Biometric Systems					
		Mobile App				√	
	Process Innovation	ERP System					
		Mobile Money Transfer					
		Online Banking	√				
	Institutional Innovation	Automation of customer service			√		
		Integration with e-government platforms		√			

		Use of crowd funding platforms		√			
	Institutional Innovation	Automation of customer service					
		Integration with e-government platforms		√			
		Use of crowd funding platforms			√		