EFFECT OF BIOMETRIC REGISTRATION TECHNIQUE ON SERVICE DELIVERY AT NHIF BRANCHES IN UASIN GISHU COUNTY

Mercy Chesang Koech, Dr. Caleb Akuku

2021

EFFECT OF BIOMETRIC REGISTRATION TECHNIQUE ON SERVICE DELIVERY AT NHIF BRANCHES IN UASIN GISHU COUNTY

[1] Mercy Chesang Koech, [2] Dr. Caleb Akuku

[1] Degree of Masters of Business Administration (Strategic Management Option)
[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology

ABSTRACT

In the competitive world the organizations which adopt appropriate innovative strategies survive and perform well. The main objective of the study was to establish the effect of biometric registration technique on service delivery at NHIF branches in Uasin Gishu County. The guiding theory was Innovation Diffusion Theory which is relevant to biometric registration. This study adopted a cross-sectional study and the accessible population for this study was 456 comprising of; 35 record officers, 11 ICT officers, 321 other staff officers and 45 NHIF clients. The researcher obtained sample size 213 using Yamane formulae. The study used simple random sampling to select respondents. The study used structured questionnaires to collect data from the accessible population. The study applied descriptive and inferential statistics to analyze collected data with the aid of SPSS software and excel. Descriptive statistics included frequency, means, mode, minimum, and maximum and standard deviation. Inferential statistics was correlation and multiple regressions. Regression analysis examined the relationship between the dependent (biometric registration technique) and the independent variable (service delivery) which predicted the value of the said dependent variable. This analysis estimated the coefficients of this predictive linear equation involving more than one of dependent variables. Study variable must pass the tolerance criteria at a tolerance level of 0.05. The study finding was significant to NHIF branches in Uasin Gishu County management team to understand biometric registration technique they should adopt in order to improve their service delivery. This will attract more clients to register for NHIF. The study results revealed that there was positive linear effect of biometric registration technique on service delivery (β_1=.094; p=0. 024). The study concluded that use of biometric registration technique at NHIF has enhance easy accessibility of data, accurate identification of personal details has been enhanced by use biometric registration technique and the use of biometric registration technique is convenient both to client and the NHIF. The study recommended the following; full implementation of biometric registration technique at NHIF this will enhance easy accessibility of data, accurate identification of personal details and increased convenience to both client and the NHIF.

Key words: biometric, registration, service, delivery, clients

Background of the Study

The concept of service delivery refers to the way in which an organization would like to have its services perceived by its clients, employees and other stakeholders (Sangiorgi, 2018). It entails a description of the client needs, how they are to be satisfied, what to offer the client, and how it is to be achieved. Service delivery involves processes and interactions between participants and

physical elements meant to deliver value and satisfaction in a system that focuses on creating value and engaging the employees to deliver the best client experience (Itani, Kassar & Loureiro, 2019). Innovative service delivery makes an organization reliable in providing client satisfaction. However, the quality of services depends on the efficiency and effectiveness of the service delivery system (Bausewein, Daveson & Higginson, 2016).

Biometric Registration is the collection of bio-information on all members (Active Members, Inactive Members and Pensioners) through the live capturing of their Fingerprints, photographs and live signatures (Rao, 2018). The significance of biometric registration on customer satisfaction within the insurance industry comprise: meeting the ever-rising demands from the customers, endurance of businesses in a rivalry environmental set-up, contributing to the vigorous progress of the businesses which in turn contributes to the Gross Domestic Product (GDP) of the economy and growing competitiveness (Sinaga, Saudi & Roespinoedji, 2019).

Universal health coverage (UHC) aims to provide health security and universal access to essential care services without financial hardship to individuals, families and communities (World Health Organization, 2017). UHC enables a transition to more productive and equitable societies and economies and is enshrined in the 2030 Sustainable Development Goals (SDGs). But UHC should not be implemented without considering the quality of the care provided (Rim & Tassot, 2019). Quality means care that is effective, safe, people-centered, timely, equitable, integrated and efficient. High-quality care improves health outcomes and reduces waste. It is integral to a high-value, sustainable health system. Universal access to high-quality health care is not a luxury only rich countries can afford. It can be achieved in all settings with strong leadership, planning and implementation.

In Ghana service delivery in the healthcare sector is looked at in terms of communication with patients, competence of staff, the staff demeanor, quality of facilities and perceived costs (Nkrumah, Yeboah & Adiwokor, 2015). For customer satisfaction to be achieved, service delivery standards should address factors such as convenience, access, waiting time, choice, quality of information, range of services, nature of patients' medical problems, patients' demographic backgrounds, a comfortable environment as well as courteous and caring staff (Lui, Vidales & Rollock, 2018). Patients' full participation or nonparticipation in the care process, compliance with medical advice, and taking personal control of their health, to some extent, are influenced by the quality of nurse-patient interaction and communication.

Insurance Fund (NHIF) (Kipo-Sunyehzi, Ayanore, Dzidzonu & Ayalsuma, 2020). National Hospital Insurance Fund (NHIF) is a state corporation that is authorized to receive contributions from self-employed and salaried employees who subsequently get entitled to health insurance benefits in the event of being hospitalized. NHIF has strived to extend its social health insurance cover to as many Kenyans as possible and has opened 66 branches across the country (Maina, Kithuka & Tororei, 2016). The recent transformation comes from the innovative strategies contained in the 2014/2017 strategic plan which also outlines various service innovations the organization makes in order to serve the customers better. The contemporary dynamic business environment necessitates strategic innovation of products, services and processes with a focus on customers, the organization's competitive capabilities for purposes of gaining competitive advantage in the market (Phillips, Barnes, Zigan & Schegg, 2017).

Statement of the Problem

Technological advancements across different sectors of the economy have necessitated vast competition and only organizations that are capable of leveraging on technology using appropriate innovative strategies survive and perform well (Mokyr, Vickers & Ziebarth, 2015). The adoption of innovative strategies presents vast advantages to organizations including improved profitability, competitive advantage, and market share growth among others. Organizations that do not adopt appropriate innovative strategies record poor performance and sometimes close down due to failure to adapt to the dynamic market conditions. National Hospital Insurance Fund (NHIF) being a service organization has undergone several transformations aimed at real time service delivery. However, there is slow response to the various innovative strategies launched in a bid to attract more members and improve service delivery. Only few members have enrolled despite the Kenya's population of over 40 million people. Statistics indicate that as at the year 2008 NHIF had only registered of 2,175,255 members against the estimated 8.7 million people that were capable of raising the required premiums. During that year, NHIF had a total membership of 2,175,255 where only 253, 267 members (11.6%) were from the non-formal sector. The remaining 1,921,985 members (88.4%) were from the formal sector. As at 2015 the membership had risen to 6, 325,060 as reflected in the strategic plan 2014/2017 contrary to the estimated possible 18 million members (Nyaberi & Kwasira, 2018). This scenario is a manifestation of a big strategic gap that calls for an urgent redress if real time service delivery at the Fund is to be realized. Therefore, this study sought to establish effect of biometric registration technique on service delivery at NHIF branches in Uasin Gishu County.

Objective of the Study

The objective of the study was to establish the effect of biometric registration technique on service delivery at NHIF branches in Uasin Gishu County.

Research Hypothesis

Ho₁: Biometric registration technique has no statistically significant effect on service delivery at NHIF branches in Uasin Gishu County

Literature Review

Theoretical Review

The study was guided by Innovation Diffusion Theory.

Innovation Diffusion Theory

Rogers' Diffusion of Innovation Theory developed by Rogers (1995). This theory proposes that there are five attributes of an innovation that affect adoption, these include: relative advantage, compatibility, complexity, trial-ability and observability. Current research evidence indicates that if a potential user sees no relative advantage in using the innovation, it was not be adopted (Greenhalgh, Wherton Papoutsi & Shaw, 2017). Compatibility is the degree to which an innovation fits with the existing values, past experiences, and needs of potential adopters. There is strong direct research evidence suggesting that the more compatible the innovation is, the greater the likelihood of adoption (De Vries, Bekkers & Tummers, 2016).

Complexity is the degree to which an innovation is perceived as difficult to understand and use (Zhang, Yan & Spil, 2015). Furthermore, Rogers suggested that new innovations may be categorized on a complexity-simplicity continuum with a qualification that the meaning or the relevance of the innovation may not be clearly understood by potential adopters. When key players perceive innovations as being simple to use the innovations was more easily adopted (Kapoor, Dwivedi & Williams, 2015). Trial ability is the degree to which an innovation may be experimented with on a limited basis. Because new innovations require investing time, energy and resources, innovations that can be tried before being fully implemented are more readily adopted. Finally, observability is the degree to which the results of an innovation are visible to the adopters. If there are observable positive outcomes from the implementation of the innovation then the innovation is more adoptable.

The relevance of the theory outlines the adoptability of NHIF to generate and pinpoint the innovative ideas in biometric registration technique and implement the idea to suits the organization in terms of operationalization and functionality of the innovative ideas the organization came up with. For this reason, the complexity, compatibility, trial ability and observability of the biometric registration technique definitely can lead to service delivery and even development of new innovation in future times. Rogers placed the contributions and criticisms of diffusion research into four categories: pro-innovation bias, individual-blame bias, recall problem, and issues of equality. The pro-innovation bias, in particular, implies that all innovation is positive and that all innovations should be adopted (Atkin, Hunt & Lin, 2015).

Cultural traditions and beliefs can be consumed by another cultures through diffusion, which can impose significant costs on a group of people (Griswold, 2012). The one-way information flow, from sender to receiver, is another weakness of this theory. The message sender has a goal to persuade the receiver, and there is little to no reverse flow. The person implementing the change controls the direction and outcome of the campaign. In some cases, this is the best approach, but other cases require a more participatory approach. In complex environments where the adopter is receiving information from many sources and is returning feedback to the sender, a one-way model is insufficient and multiple communication flows need to be examined (Ritter, Jansen, Roche & Barkema, 2017).

Empirical Review

Biometric Registration Technique and Service Delivery

Mulumba (2012) did a study on biometric authentication systems and service delivery in healthcare sector in Kenya. This study constituted a descriptive survey involving 43 healthcare facilities that were using biometric systems within Nairobi city in Kenya. The study objective was to look at the factors affecting the performance of biometrics in the healthcare sector and the impact of its use in service delivery. The findings revealed a number of factors affecting the performance of biometric systems in the healthcare facilities which include system response time, technical accuracy, ease to operate, information output, security, knowledge of biometrics by the IT support, IT support willingness to help, ability to withstand large number of users, system ease of use by patients, system user experience, reliability, promptness of IT support team and patient's manner of usage.

Koskei (2014) conducted a study on the implication of using biometric system on payment operations of an organization: a case study of one Non-Governmental Organization. The study adopted a descriptive research design. The total population for this study was 100 organization and client staff. Study results showed that 45% of the respondents agreed that payment of per diem to clients using BVR has reduced cash handling while three quarters either agreed or strongly agreed that use of BVR has helped reduce fraud drastically. When asked whether use of BS has made payments easy, more than three quarters (83%) agreed or strongly agreed. Nearly one third of staff disagreed that use of the system has fastened the reconciliation of advances.

Kisame (2016) did a study on computerized biometric employee clocking system and operational performance: case study of Moi Teaching and Referral Hospital. The study adopted a descriptive survey research design. The study showed that there was a statistically significant influence of computerized biometric employee clocking system on operational performance MTRH. It was therefore concluded that supervision practices like monitoring, appraisal and feedback and staff coaching on job improves performance of nonacademic staff. The study recommends that future researchers should explore comparative studies to explore the extent to which computerized biometric employee clocking systems influence operational performance across organizations.

Roland (2017) focused on an elaboration on measures to promote institutional innovation, transformation, and inclusiveness to enhance public service delivery. The study describes biometric technique as an automated method of recognizing an individual based on certain physiological or behavioural characteristics. Biometrics originated in the indemnificatory systems of criminal activity developed by Alphonse Bertillon based on Francis Galton's theory of fingerprints and physiognomy. In the contemporary era of information technology advancement, some of the commonly used biometric techniques include fingerprints, iris scanning, facial geometry (facial recognition), hand geometry, vein pattering DNA profiling among other emerging ear and nose biometrics.
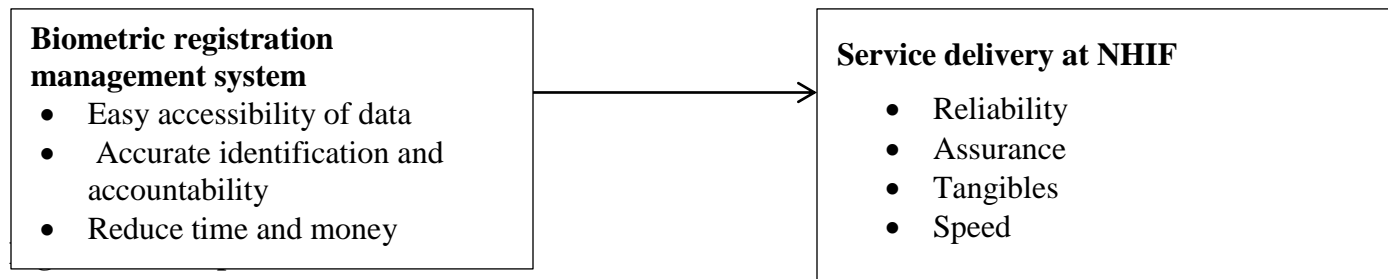
Nyaberi and Kwasira (2018) sought to assess various innovative strategies adopted by the organization's 2014/2017 strategic plan to improve service delivery in terms of benefits, accessibility and growth in membership. The study was guided by stakeholder theory, technology acceptance theory and Institutional theory. In addition, the study adopted a descriptive research design. Structured questionnaires pilot-tested and further administered. Data collected was analyzed using descriptive and inferential statistics with the aid of the Statistical Package for Social Sciences version 20. A Pearson correlation analysis and a linear regression analysis were done. The correlation analysis done indicated positive correlations between Biometric registration techniques and the dependent variable Service delivery. Based on the results of the regression analysis, the first null hypothesis was rejected since the Biometric registration techniques were found to be having significant positive influence on service delivery at NHIF Nakuru branch.

Mbau et al., (2020) study was to look at the factors affecting the performance of biometrics in the healthcare sector and the impact of its use in service delivery. This study constituted a descriptive survey involving 43 healthcare facilities that were using biometric systems within Nairobi city in Kenya. The findings revealed a number of factors affecting the performance of biometric systems in the healthcare facilities which include system response time, technical accuracy, ease to operate, information output, security, knowledge of biometrics by the IT

support, IT support willingness to help, ability to withstand large number of users, system ease of use by patients, system user experience, reliability, promptness of IT support team and patient's manner of usage.

Conceptual Framework

The study independent variable was biometric registration technique and the study dependent variable was service delivery at NHIF.

Biometric registration management system	Service delivery at NHIF
• Easy accessibility of data • Accurate identification and accountability • Reduce time and money	• Reliability • Assurance • Tangibles • Speed

Research Methodology

Research Design

This study adopted a cross-sectional study. A cross-sectional study examines the relationship between biometric registration technique and other variables of interest as they exist in a defined population at a single point in time or over a short period of time (Krapp & Prenzel, 2011). This design was chosen because it is relatively quick and easy to conduct; data on all variables is only collected once.

Target Population

The target population for this study were employees of NHIF branches in Uasin Gishu County. However, the accessible population for this study was 35 record officers, 11 ICT officers, 321 other staff officers and 45 NHIF clients

Sample Size

The researcher obtained the sample size using Yamane formulae (1967).

$$n = \frac{N}{1+Ne^2}$$ **……………………………………….………...………Equation 1**

Where n is the sample size required

 N is the population size =456

e is the level of precision = 0.05

$$n = \frac{456}{1+456 \times 0.05^2}$$ **………………………………….………...………Equation 2**

n=213

Therefore, the sample size for this study was 213 respondents proportionally distributed

Sampling Technique

This study adopted simple random sampling to select the respondents. This method was used because, each member of the population under study has an equal chance of being selected. Therefore, biasness was avoided by use of random sampling. This is because there was a high probability that all the population characteristics was represented in the sample.

Research Instruments

The study used structured questionnaire. The questions was determined by a 5 point likert scale. This question allowed participants to rank their views in terms of the following statements: strongly agree, agree, undecided; disagree; strongly disagree.

Pilot Study

A pilot study was carried out in NHIF Kapsabet branch that was not be involved in the main study, but has same characteristics with NHIF branches in Uasin Gishu County. This was done to determine the validity and reliability of the questionnaire on the study. The researcher was administered 21 questionnaires to respondents at the NHIF Kapsabet branch 10% of sample population.

The study applied content validity which looks at whether the instrument adequately covers all the content that it should with respect to the variable. A subset of content validity is face validity, where experts was asked their opinion about whether an instrument measures the concept intended.

Cronbach's alpha α coefficient was used by the researcher to measure internal consistency of the study, in the survey instruments, to gauge their reliability. This was done by calculating the Cronbach's alpha coefficient for all the sections of the questionnaire from the results of the pilot study. To do this the reliability of the instrument (questionnaire) the split-half method was applied.

Data Processing and Analysis

Data obtained from the questionnaires was coded, organized, analyzed. The study applied descriptive and inferential statistics to analyze collected data with the aid of SPSS software and excel. Descriptive statistics included frequency, means and standard deviation. Inferential statistics was correlation and multiple regressions. Regression analysis examined the relationship between the dependent (biometric registration technique) and the independent variable (service delivery) which predicted the value of the said dependent variable. This analysis estimated the coefficients of this predictive linear equation involving more than one of dependent variables. Study variable must pass the tolerance criteria at a tolerance level of 0.05.

The following multiple regression models guided analysis from collected data.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{Equation 3}$$

Where:

Y Represents service delivery at NHIF

β_0 Represents Constant

$β_1$, Repesent régression Coefficients of the Independent variable

X_1 Represents biometric registration variable

Ɛ Represents Error Term

Research Findings and Discussions

Questionnaire Response Rate

The sought to determine how many respondents participated in the study. The results are presented in Table 1.

Table 1 Response Rate

	Response rate	Frequency	Percent
Staffs	Responded questionnaires	150	87.7
	Non-response	21	12.3
NHIF Client	Responded questionnaires	17	80.9
	Non-response	4	19.1
	Total	**213**	**100**

From Table 1 it is revealed that the study targeted a sample of 213 respondents out of which 150 staffs returned questionnaires representing 87.7% response rate. The client response rate was 80.9%. This response rate agreed with Babbie, (2004) who asserted that response rates of 50% are acceptable to analyses and publish, 60% is good and 70% is very good. Based on these assertions 70.4% response rate is adequate for the study

Descriptive Results of Study Variables

In this section, the study analyzed the objective of the study regarding effect of biometric registration technique on service delivery at NHIF branches in Uasin Gishu County. In order to achieve this, a five-point Likert scale was used where; 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree.

Biometric Registration Technique

The objective of the study was to analyses the effect of biometric registration technique on service delivery at NHIF. Using a five-point likert scale, the study sought to know respondents' level of agreement on various statements relating to biometric registration technique. Table 2 presents the study results.

Table 2 Biometric Registration Technique

Statements		SA	A	UD	D	SD	Mean	Std dev.
i. The use of biometric registration technique at NHIF has enhance easy accessibility of data	F	71	56	16	1	6	4.23	0.96
	%	47.3	37.3	10.7	0.7	4		
ii. Accurate identification of personal details has been enhanced by use biometric	F	44	28	50	24	4	3.56	1.15
	%	29.3	18.7	33.3	16	2.7		
iii. There has been reduced service delivery time due to use biometric	F	60	60	19	7	4	4.1	0.97
iv. The use of biometric registration technique is convenient both to client and the NHIF	F	60	25	38	23	4	3.76	1.21
	%	40	16.7	25.3	15.3	2.7		
Valid N	**150**						**3.91**	

Table 2 shows that 127(84.6%) of the respondents agreed with the statement that the use of biometric registration technique at NHIF has enhanced easy accessibility of data. However,7(4.6%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that the use of biometric registration technique at NHIF has enhance easy accessibility of data (Mean=4.23, Std. dev=0.960). Also, 72(48%) of the respondents agreed with the statement that Accurate identification of personal details has been enhanced by use biometric registration technique. However, 28(18.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that accurate identification of personal details has been enhanced by use biometric registration technique (Mean=3.56, Std. dev=1.150).

Further, 120(80%) of the respondents agreed with the statement that there has been a reduced service delivery time due to use of biometric registration technique. However, 11(7.3%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that there has been reduced service delivery time due to use biometric registration technique (Mean=4.10, Std. dev=0.970). Finally, 85(56.7%) of the respondents agreed with the statement that the use of biometric registration technique is convenient to both client and NHIF. However, 27(18%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that the use of biometric registration technique is convenient both to client and the NHIF (Mean=3.76, Std. dev=1.21). The study results also show that biometric registration technique has a positive influence on service delivery at NHIF.

This implies the use of biometric registration technique at NHIF has enhance easy accessibility of data, accurate identification of personal details has been enhanced by use biometric registration technique and the use of biometric registration technique is convenient both to client

and the NHIF. The study results concur with Teoh, Chong, Lin and Chua (2013) who indicated that electronic payment systems have spread not only in Malaysia but in other countries as well. This has been due to the various campaigns launched by the banking institutions and the Central Bank of Malaysia. The results of the study reflect that perceived benefits, self-efficacy and ease of use were the main factors. As a matter of fact, the use of efficiently programmed Electronic Payment services raises the customer trust in the service provider.

The study results also concur with Nwankwo and Ajemunigbohun (2016) who noted reasons why electronic payment systems are significant to include: improvement of quality of life; improvement of effective service delivery and increase in the social wellbeing of Nigerians; provision of quicker and better services and spontaneous responses to demand conditions; enhancement of competitiveness and helps to gain a competitive advantage.

Service Delivery

The study sought to determine the effect of biometric registration technique on service delivery at NHIF branches in Uasin Gishu County. Using a five-point likert scale, the study sought to know respondents' level of agreement on various statements relating to service delivery. Table 3 presents the results of service delivery.

Table 3 Service Delivery

Statements			SA	A	UD	D	SD	Mean	Std dev
i. Number of entries passed through has increased	F		75	64	4	1	6	4.34	0.9
	%		50	42.7	2.7	0.7	4		
ii. Responsiveness of service providers affect the customer satisfaction	F		66	69	2	7	6	4.21	0.98
	%		44	46	1.3	4.7	4		
iii. NHIF are dependable in handling customers' service problems.	F		71	66	6	1	6	4.3	0.9
	%		47.3	44	4	0.7	4		
iv. Empathy of service providers affect the customer satisfactions	F		66	35	30	13	6	3.95	1.16
	%		44	23	20	8.7	4		
Valid	**N**		**150**					**4.2**	

Table 3 shows that 139(92.7%) of the respondents agreed with the statement that number of entries passed through has increased. However, 7(4.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that number of entries passed through has increased (Mean=4.34, Std. dev=0.90). Further, 135(90%) of the respondents agreed with the statement that responsiveness of service providers affect the customer

Grandmark Publishers

satisfaction. However, 13(8.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that responsiveness of service providers affect the customer satisfaction (Mean=4.21, Std. dev=0.980).

Also, 137(91.4%) of the respondents agreed with the statement that NHIF are dependable in handling customers' service problems. However, 7(4.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that NHIF are dependable in handling customers' service problems (Mean=4.30, Std. dev=0.90). Finally, 101(67.3%) of the respondents agreed with the statement that empathy of service providers affect the customer satisfactions. However, 19(12.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that empathy of service providers affect the customer satisfactions (Mean=3.95, Std. dev=1.16).

The study results also show that biometric registration technique on service delivery at NHIF branches in Uasin Gishu County. The study results concur with (Lui, Vidales & Rollock, 2018) who asserts that for customer satisfaction to be achieved, service delivery standards should address factors such as convenience, access, waiting time, choice, quality of information, range of services, nature of patients' medical problems, patients' demographic backgrounds, a comfortable environment as well as courteous and caring staff.

Service Delivery for NHIF Clients

The study sought to determine the effect of biometric registration technique on service delivery for clients at NHIF branches operating in Uasin Gishu County. Table 4 presents the study results.

Table 4 Service Delivery

Statements		SA	A	UD	D	SD	Mean	Std.dev.
i. Number of clients served at the same time has increased	F	9	7	0	0	1	4.34	0.856
	%	52.9	41.2	0.0	0.0	5.9		
ii. The service providers are responsive hence being satisfied	F	7	8	0	1	1	4.21	0.947
	%	41.2	47.1	0.0	5.9	5.9		
iii. NHIF are dependable in delivering services	F	8	7	1	0	1	4.3	864
	%	47.1	41.2	5.9	0.0	5.9		
iv. Staff sat NHIF have empathy towards customers	F	7	4	3	1	1	3.95	1.14
	%	41.2	23.5	17.6	5.9	5.9		
v. NHIF staffs responds well to customers' questions	F	5	6	2	2	1	3.72	1.23
	%	29.4	35.3	11.8	11.8	5.9		
vi. NHIF staffs responds well to customers' questions	F	3	6	3	3	3	3.19	1.365
	%	17.6	35.3	17.6	17.6	17.6		
Valid	**N 17**							

Table 4 shows that 16(94.1%) of the respondents agreed with the statement that number of clients served at the same time has increased. However, 1(5.9%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that number of clients served at the same time has increased (Mean=4.34, Std. dev=0.856). Also, 15(88.3%) of the respondents agreed with the statement that the service providers are responsive hence being satisfied. However, 2(11.8%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that the service providers are responsive hence being satisfied (Mean=4.21, Std. dev=0.947).

Another, 15(88.3%) of the respondents agreed with the statement that NHIF are dependable in delivering services. However, 1(5.9%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that NHIF are dependable in delivering services (Mean=4.30, Std. dev=0.864). Further, 11(64.7%) of the respondents agreed with the statement that staffs at NHIF have empathy towards customers. However, 2(11.8%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that staffs at NHIF have empathy towards customers (Mean=3.95, Std. dev=1.140). Also, 11(64.7%) of the respondents agreed with the statement that NHIF staffs responds well to customers' questions. However, 3(17.7%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that NHIF staffs responds well to customers' questions (Mean=3.72, Std. dev=1.230).

Finally, 9(52.9%) of the respondents agreed with the statement that the materials associated with the service are visually appealing at NHIF. However, 6(35.2%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that the materials associated with the service are visually appealing at NHIF (Mean=3.59, Std. dev=1.30). The study results also shows that biometric registration technique has a positive influence on service delivery for clients at NHIF branches operating in Uasin Gishu County. This concurs with Abdullahi, Ibrahim, Ibrahim & Bala, (2019) with who asserts that Processing of tendering activities electronically has resulted to saving of time, enhanced effectiveness and efficiency as a result of electronic enabled relationship with the suppliers, removal of trivial activities, correctness of data, and improved supplier performance.

Inferential analysis

Inferentially data were analyzed using correlation and regression analysis.

Correlation Analysis

Pearson correlation analysis was carried out to show the strength and direction of the association between independent and service delivery at NHIF. Table 5 present the results.

Table 5 Multiple Correlation Analysis Results

		Service delivery	Biometric registration technique
Service delivery	Pearson Correlation	1	
	Sig. (2-tailed)		
Biometric registration technique	Pearson Correlation	.414[**]	1
	Sig. (2-tailed)	.000	

The study findings in Table 5 indicated that biometric registration technique and service delivery had a positive moderate and statistically significant correlation (r= 0.414; p<0.01).

Regression Analysis

Model fitness was run to find out if model best fit for the data. The study results were presented in Table 6.

Regression Model Coefficients

Regression model coefficients were run in order to use in the regression equation. The study results are presented in Table 7.

Table 7 Regression Model Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.227	0.118		1.931	0.005
Biometric registration technique	0.094	0.025	0.137	3.789	0.024

The study results in Table 7 revealed that there was positive linear effect of Biometric registration technique on service delivery (β_1=.094; p=0. 024). This reveals that an increase in biometric registration technique leads to increase in service delivery by 0.094 units.

Thus, the regression equation becomes;

$Y =0.227+0.094X_1$…………………….Equation 4

Hypotheses Testing

The null hypothesis H_{01}: stated that biometric registration technique has no significant effect on service delivery at NHIF operating in Uasin Gishu County Government. However, the The study rejected the null hypothesis and concluded that there is significanteffect of biometric registration technique onservice delivery at NHIF operating in Uasin Gishu County Government with a beta coefficient of 0.094 and significance of (p= 0.000) as presented in the regression results in Table 8. These results concur with Teoh, Chong, Lin and Chua (2013) who indicate a significant relationship between security and trust with consumers' perception

Table 8 Summary of Hypotheses Test Results

	Hypothesis	Coeff	p-value	Decision
H_{01}	Biometric registration technique has no statistically significant effect on service delivery at NHIF branches in Uasin Gishu County.	.094	.000	Null hypothesis rejected

Conclusions of the Study

The study concluded that use of biometric registration technique at NHIF has enhance easy accessibility of data, accurate identification of personal details has been enhanced by use biometric registration technique and the use of biometric registration technique is convenient both to client and the NHIF.

Recommendations of the Study

Full implementation of biometric registration technique at NHIF this will enhance easy accessibility of data, accurate identification of personal details and increased convenience to both client and the NHIF.

REFERENCE

Abdullahi, B., Ibrahim, Y. M., Ibrahim, A., & Bala, K. (2019). Development of e-tendering evaluation system for Nigerian public sector. *Journal of Engineering, Design and Technology*, *1*(1), 59-65.

Agyemang, B., Abledu, G. K., & Semevoh, R. (2013). Regression analysis of road traffic accidents and population growth in Ghana. *International Journal of Business and Social Research (IJBSR)*, *3*(10), 41-47.

Atkin, D. J., Hunt, D. S., & Lin, C. A. (2015). Diffusion theory in the new media environment: Toward an integrated technology adoption model. *Mass Communication and Society*, *18*(5), 623-650.

Babbie, E. (2004). Laud Humphreys and research ethics. A guide for public administration researchers and practitioners. *International journal of sociology and social policy*, *36*(3), 237-258.

Bausewein, C., Daveson, & Higginson, I. J. (2016). EAPC White Paper on outcome measurement in palliative care: Improving practice, attaining outcomes and delivering quality services–Recommendations from the European Association for Palliative Care (EAPC) Task Force on Outcome Measurement. *Palliative medicine*, *30*(1), 6-22.

Bercu, B., & Praia, F. (2013). A Sharp Analysis on The Asymptotic Behavior of The Durbin–Watson Statistic for The First-Order Autoregressive Process. *ESAIM: Probability and Statistics*, *17*(12), 500-530

De Vries, H., Bekkers, V., & Tummers, L. (2016). Innovation in the public sector: A systematic review and future research agenda. *Public administration*, *94*(1), 146-166.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, *5*(1), 1-4.

Filippou, P., Marra, G., & Radice, R. (2017). Penalized likelihood estimation of a trivariate additive probit model. *Biostatistics*, *18*(3), 569-585.

García, C. B., García, J., López Martín, M. M., & Salmerón, R. (2015). Collinearity: revisiting the variance inflation factor in ridge regression. *Journal of Applied Statistics*, *42*(3), 648-661.

George, D., & Mallery, P. (2003). Reliability analysis. *SPSS for Windows, step by step: a simple guide and reference, 14th edn. Boston: Allyn & Bacon*, 222-232.

Greenhalgh, T., Wherton, J., Papoutsi, & Shaw, S. (2017). Beyond adoption: a new framework for theorizing and evaluating no adoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of medical Internet research*, *19*(11), 367-371.

Griswold, W. (2012). *Cultures and Societies in A Changing World*. Newcastle: Sage.

Guest, G., Namey, E. E., & Mitchell, M. L. (2013). Qualitative research: Defining and designing. *Collecting qualitative data: A field manual for applied research*, 1-40.

Hazzi, O., & Maldaon, I. (2015). A pilot study: Vital methodological issues. *Business: Theory and Practice*, *16*(1), 53-62.

Itani, O. S., Kassar, A. N., & Loureiro, S. M. C. (2019). Value gets, value give: The relationships among perceived value, relationship quality, customer engagement, and value consciousness. *International Journal of Hospitality Management*, *80*, 78-90.

Kapoor, K. K., Dwivedi, Y. K., & Williams, M. D. (2015). Empirical examination of the role of three sets of innovation attributes for determining adoption of IRCTC mobile ticketing service. *Information Systems Management*, *32*(2), 153-173.

Kipo-Sunyehzi, D. D., Ayanore, M. A., Dzidzonu, D. K., & and, Y. (2020). Ghana's Journey Towards Universal Health Coverage: The Role of The National Health Insurance Scheme. *European Journal of Investigation in Health, Psychology and Education*, *10*(1), 94-109.

Kisame, H. A. (2016). *Computerized Biometric Employee Clocking System and Operational Performance: Case Study of Moi Teaching and Referral Hospital*. *Journal of Advances in Mathematics and Computer Science*, 735-747.

Koskei, N. J. (2014). *The Implication of Using Biometric System on Payment Operations of An Organization: A Case Study of One Non-Governmental Organization*. *Southern African Business Review*, *15*(1), 23-59

Krapp, A., & Prenzel, M. (2011). Research on interest in science: Theories, methods, and findings. *International journal of science education*, *33*(1), 27-50.

Lui, P. P., Vidales, C. A., & Rollock, D. (2018). Personality and the social environment: Contributions to psychological adjustment among Asian and Euro American students. *Journal of Social and Clinical Psychology*, *37*(9), 659-696.

Maina, J. M., Kithuka, P., & Tororei, S. (2016). Perceptions and uptake of health insurance for maternal care in rural Kenya: a cross sectional study. *Pan African medical journal*, *23*(1), 23-27.

Mbau, R., Kabia, E., Honda, A., Hanson, K., & Barasa, E. (2020). Examining purchasing reforms towards universal health coverage by the National Hospital Insurance Fund in Kenya. *International journal for equity in health, 19*(1), 19-63

Mohajan, H. K. (2017). Two Criteria for Good Measurements in Research: Validity and Reliability. *Annals of Spiru Haret University. Economic Series*, *17*(4), 59-82.

Mokyr, J., Vickers, C., & Ziebarth, N. L. (2015). The history of technological anxiety and the future of economic growth: Is this time different?. *Journal of economic perspectives*, *29*(3), 31-50.

Mulumba, M. A. (2012). Biometric Authentication Systems and Service Delivery in Healthcare Sector in Kenya. *Journal of Computer Sciences & Applications*, *12*(1), 22-32.

Mundry, R. (2014). Statistical issues and assumptions of phylogenetic generalized least squares. In *Modern phylogenetic comparative methods and their application in evolutionary biology* (pp. 131-153). Springer, Berlin, Heidelberg.

Nkrumah, S., Yeboah, F. B., & Adiwokor, E. (2015). Client satisfaction with service delivery in the health sector: The case of Agogo Presbyterian Hospital. *International Journal of Business Administration*, *6*(4), 64.

Nwankwo, S. I., & Ajemunigbohun, S. S. (2016). Empirical examination of the implementation of electronic payment systems in service delivery of insurance companies in Nigeria. *Journal of Economics & Management*, *24*, 64-76.

Nyaberi, D., & Kwasira, J (2018). Assessment of Innovative Strategies on Service Delivery at The National Hospital Insurance Fund Nakuru, Kenya. *International Journal of Business and Social Science*, *2*(5), 142-14

Orodho, A. J. (2003). Essentials of educational and social science research methods. *Nairobi: Masola Publishers*, *54*, 71-82.

Phillips, P., Barnes, S., Zigan, K., & Schegg, R. (2017). Understanding the impact of online reviews on hotel performance: an empirical analysis. *Journal of Travel Research*, *56*(2), 235-249.

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and anderson-darling tests. *Journal of statistical modeling and analytics*, *2*(1), 21-33.

Rim, J. Y., & Tassot, C. (2019). Towards universal social protection: Lessons from the universal health coverage initiative. *International Interactions*, *12*(2), 95-107.

Ritter, C., Jansen, J., Roche, S., & Barkema, H. W. (2017). Invited Review: Determinants of Farmers' Adoption of Management-Based Strategies for Infectious Disease Prevention and Control. *Journal of Dairy Science*, *100*(5), 329-347.

Roland, G. (2017). An Elaboration on Measures to Promote Institutional Innovation, Transformation, And Inclusiveness to Enhance Public Service Delivery. *Review Pub Administration Manag*, *5*(2), 2-9

Sangiorgi, D. (2018). Service Design as An Approach to Implement the Value Cocreation Perspective in New Service Development. *Journal of Service Research*, *21*(1), 40-58

Saudi, M. H. M., Sinaga, O., & Roespinoedji, D. (2019). The impact of technological innovation on energy intensity: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, *9*(3), 11.

Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*(6), 273-296.

Teoh, W. M. Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research*. *Glob J Bus Discip*, *4*(1), 4-7.

Yu, H., Jiang, S., & Land, K. C. (2015). Multicollinearity in hierarchical linear models. *Social science research*, *53*, 118-136.

Zhang, X., Yu, P., Yan, J., & Spil, I. T. A. (2015). Using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations: a case study in a primary care clinic. *BMC health services research*, *15*(1), 1-15.