

Innovative Strategies Influencing Performance of National Hospital Insurance Fund in Nairobi County Kenya

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Abstract- National health insurance is health insurance that insures a national population for the costs of health care and usually is instituted as a program of healthcare reform. In Kenya the only National Health Insurance Fund is the NHIF. The study's specific objectives were to determine the effect of process re-engineering strategy on performance of NHIF, to establish the effect of benefit management strategy on performance of NHIF, to determine the effect of information communication strategy on performance of NHIF and to determine the effect of E-Banking strategy on performance of NHIF. A survey research design technique was used to collect data which involved the use of both primary and secondary data sources. Structured questionnaires were used to collect primary data. The target population of the study consisted of 601 employees of the 6 branches and 4 satellite offices of the National Hospital and Insurance Fund located in Nairobi County. A sample size of 150 respondents from the 10 selected NHIF offices in Nairobi County was drawn. One way analysis of variance was used to test for statistical significance in the difference of the performance means ascribed to the different NHIF strategies from the different branches and satellite offices. The significance probability results for process re-engineering strategy ($P = 0.230$), benefit management strategy ($P = 0.098$), information communication strategy ($P = 0.578$) and E-banking strategy ($P = 0.643$) were greater than the level of significance of 99% (0.01). This shows there exists statistically significant differences in mean performance between the four strategies at 99% (0.01) level of significance. The 2 way ANOVA illustrated that the distribution of information on process re-engineering ($P=0.122$), distribution on benefit management strategy ($P=0.088$), distribution of information communication strategy ($P=0.534$), and distribution of information on E-Banking strategy ($P=0.016$) was the same across the different NHIF branches/satellite offices surveyed and operating in Nairobi County. The study findings established that strategies play a critical role in improving performance of organizations and giving organizations directions.

Index Terms- Health Information Systems, Out of pocket Health expenditure, Innovative strategies

I. INTRODUCTION

1.1 Background of the study

National health insurance (sometimes called statutory health insurance) is health insurance that insures a national population for the costs of health care and usually is instituted as a program of healthcare reform. It is enforced by law. It may be administered by the public sector, the private sector, or a combination of both. Funding mechanisms vary with the particular program and country. National or Statutory health insurance does not equate to government run or government financed health care, but is usually established by national legislation (NewYorkTimes, 2012). There exist two major models of national health insurance that is, the Beveridge and the Bismarck model. The model was named after William Beveridge, the daring social reformer who designed Britain's National Health Service (Henlock, 2007). In this system, health care is provided and financed by the government through tax payments, just like the police force or the public library. Here, many, but not all, hospitals and clinics are owned by the government; some doctors are government employees, but there are also private doctors who collect their fees from the government. In Britain, you never get a doctor bill. These systems tend to have low costs per capita, because the government, as the sole payer, controls what doctors can do and what they can charge (Leichter, 2005).

Countries using the Beveridge plan or variations on it include its birthplace Great Britain, Spain, most of Scandinavia and New Zealand. Hong Kong still has its own Beveridge-style health care, because the populace simply refused to give it up when the Chinese took over that former British colony in 1997. Cuba represents the extreme application of the Beveridge approach; it is probably the world's purest example of total government control (Leichter, 2005). In Australia's Medicare system or the United Kingdom's National Health Services (NHS), contributions to the National Health Insurance (NHI) or Social Health Insurance SHI system are made via taxation and therefore are not optional even though use of the health scheme it finances is (Leichter, 2005). In practice of course, most people paying for national health insurance will join the insurance scheme. Where the national health insurance scheme involves a choice of multiple insurance funds, the rates of contributions may vary and the person has to choose which insurance fund to

belong to. In the United States, the Patient Protection and Affordable Care Act includes a "health insurance mandate" that produces a similar effect as National Health Insurance (NHI) or Social Health Insurance (SHI), though it relies more heavily on the private market than their public sector (Medicare, Medicaid, and S-CHIP) than most countries. Thus the US Federal government has been involved in sponsoring several multi-state insurance plans (NewYorkTimes, 2012).

The Bismarck model Named for the Prussian Chancellor Otto von Bismarck, who invented the welfare state as part of the unification of Germany in the 19th century. Despite its European heritage, this system of providing health care would look fairly familiar to Americans. It uses an insurance system- the insurers are called "sickness funds"-usually financed jointly by employers and employees through payroll deduction. Unlike the U.S. insurance industry, though, Bismarck-type health insurance plans have to cover everybody, and they don't make a profit (Hennock, 2007). Doctors and hospitals tend to be private in Bismarck countries; Japan has more private hospitals than the U.S. Although this is a multi-payer model — Germany has about 240 different funds — tight regulation gives government much of the cost-control clout that the single-payer Beveridge Model provides. The Bismarck model is found in Germany, of course, and France, Belgium, the Netherlands, Japan, Switzerland, and, to a degree, in Latin America (Hennock, 2007). Other countries are largely funded by contributions by employers and employees to sickness funds. With these programs, funds come from neither the government nor direct private payments. This system operates in countries such as Germany and Belgium. These funds are usually not for profit institutions run solely for the benefit of their members. Usually characterization is a matter of degree: systems are mixes of these three sources of funds (private, employer-employee contributions, and national/sub-national taxes). In addition to direct medical costs, some national insurance plans also provide compensation for loss of work due to ill-health, or may be part of wider social insurance plans covering things such as pensions, unemployment, occupational retraining, and financial support for students (Leichter, 2005).

National schemes have the advantage that the pool or pools tend to be very, very large and reflective of the national population. Health care costs, which tend to be high at certain stages in life such as during pregnancy and childbirth and especially in the last few years of life can be paid into the pool over a lifetime and be higher when earnings capacity is greatest to meet costs incurred at times when earnings capacity is low or non-existent. This differs from the private insurance schemes that operate in some countries which tend to price insurance year on year according to health risks such as age, family history, previous illnesses, and height/weight ratios. Thus some people tend to have to pay more for their health insurance when they are sick and/or are least able to afford it. These factors are not taken into consideration in National Health Insurance schemes. In private schemes in competitive insurance markets, these activities by insurance companies tend to act against the basic principles of insurance which is group solidarity (Leathard, 2000).

In Kenya, the NHIF was established through an act of parliament in 1966 as a department in the Ministry of Health to provide health insurance exclusively for those in

formal employment. In 1972, an amendment to allow for membership for those in informal employment was made. In 1998, the fund was transformed into a state corporation through an act of parliament that is, NHIF Act no 9 of 1998 (Deloitte, 2012). The mandate of NHIF includes;-registering members, receiving fund contributions and payments, make payments out of the fund to declared hospitals, set criteria for the declaration of hospitals and their accreditation, regulate contributions payable to the fund, the benefits and other payments made out to the fund, protect the interests of fund contributors and advise government on the national policy with regard to national health insurance (Deloitte, 2012). The fund discharges its mandate through 2 major agents that is; - employer's monthly contributions to the fund and declared hospitals that disperse medical services on credit of NHIF members and later receive reimbursements through hospital claims (Deloitte, 2012).

In terms of the operation of its mandate, the NHIF's operations are geared towards; - Pooling of funds- collections are done at head offices for purposes of equity and access to all members. Collections are done at branch offices and deposited to a main account. Based on equity and budgets, the contributions are allocated for payment of claims and administration of the service point. Remittance of contributions via online banking for employers and m-pesa for informal sector based contributors for members to enhance operational efficiency the fund has established an online banking facility for the over 50,000 employers registered to remit their contributions rime in reducing the amount of queue time in NHIF offices (Deloitte, 2012).

Concerning Membership to the fund; - the fund covers all adults over the age of 18 and their dependents. This includes the facilitation for universal coverage via legal framework in line with the principles of social health insurance. This fund has implemented measures such as; - online registration and magnetic stripe cards while it is in the process of linking with other government institutions and automatic updates. Registration- the fund has instituted an online registration mechanism that allows for the registration of new members with their dependents subject to fulfilling requirements that include the presentation of identification documents. In addition membership may be verified via SMS (Deloitte, 2011).

Concerning card issuance, in addition to registration - members are issued with portable membership cards that link the fund systems for use in any region of Kenya with fund declared health facilities. This technology increases efficiencies in service to members and allows for the management of fraud (Deloitte, 2011). NHIF seeks to enhance this process, additionally it has enabled the management of fraud. NHIF is currently in the process of improving its card system to include biometric technology for ease of identification as well as the integration of the card system with a bio-data system. Linkage with other government institutions- the fund is currently working on modalities of integrating its systems with those of the national bureau of registration for automatic updates of members details in order to ensure that all births and deaths are updated at the time when such certificates are issued (Deloitte, 2012).

Concerning communication systems on Benefits management, the fund has a surveillance mechanism in place that has reduced the incidences of fraudulent claims, rejected claims and has greatly improved the operational efficiency of the fund in

processing claims such that the average length of stay/ wait for claims processing has come down to 4 days from 11 days in 2004 (KIPRA, 2010). In addition NHIF closely works with health care providers via participation in hospital quality boards and has formed quality improvement teams in all accredited hospitals and empirical result evaluation systems. The fund also conducts clinical and quality audits quarterly for the purpose of evaluating and monitoring hospitals to ensure quality for members as well as the broader Kenyan population (KIPRA, 2010). Health management information systems are used by the fund through a wide network of accredited health care providers. It is the intention of the fund to develop a reference for health data with initial steps that include the adoption of the International Disease Coding Systems ICD-10 which has currently been implemented. This is to provide for easy analysis of disease trends, plan for benefit packages and ease the comparability of the fund to other countries (MOH, 2010).

Currently the NHIF provides 3 benefit packages and these include:- The standard benefits package which is an in-patient comprehensive cover at selected health care providers where members can visit any declared health providers to access services in any of the 500 such facilities in Kenya who provide services to all members based on 3 categories (that is; contract A where the health provider offers comprehensive care for both medical and surgical procedures for inpatient members and their declared dependents with no copayment ; contract B where members receive comprehensive services as per the contracted medical services for the health provider mainly in small private and mission based facilities; Contract C where payment is at the declared rebate rate for the number of days that a patient is admitted. The civil servants medical scheme introduced in 2012 to target civil servants and their dependents, it comprises of both in and outpatient services and an outsourced group life cover and last expense (KIPRA, 2012).

1.2 Statement of the problem

Kenya has a mixed health system with the public sector as the main player, a significant private sector and NGO sector by mainly Faith Based Organizations FBO. The health system in Kenya is characterized by; -under provision of funds, human resources, health commodities (drugs, infrastructure and Technology) as well as resource allocation bottlenecks and perennial leakages (corruption and misallocation). In rural and remote areas especially, these resource constraints coupled up with the pressures on the health system resulting from population increases, technology changes, re-emerging diseases and changing consumer needs has resulted in a weak primary health care system that bleeds into an inefficient referral system (Deloitte, 2011). In membership terms, only 19% of Kenyans have any form of health insurance at all despite the statutory obligation for all Kenyans who earn above KSH1000 to register in the NHIF scheme thus, as of June, 2010, the NHIF has managed to reach 6.6 million beneficiaries (out of a targeted population of 42 million Kenyans) and 2.8 million principle members, thus 82% of Kenyans are yet to have Health Insurance. In terms of claims; the benefits to pay-out ratio has increased from 32% in 2006 to 54% in 2010 i.e. proportion of payouts relative to fund contributions) driven by rapid increases in Claims payout from KSH1.1 billion in 2005 to KSH3.5 billion in

2010(KIPRA, 2010). The investment of ICT to reach members and support the delivery of its mandate with the introduction of Electronic Funds Transfer (m-pesa) for contributions, Swipe Cards, Point of sale POS systems, etcetera that have reduced the claims process from a month to 14-21 days. The rebates on its inpatient package have increased alongside the number of accredited hospitals included in the NHIF network with approximately 645 health facilities on the NHIF network, accounting for 44, 299 beds against a total of 49,000 available beds country wide-making it (NHIF) by far the largest insurer in the country(MOH, 2010).Despite these improvements by the NHIF in both hospital coverage and membership over the past decade, a significant 82% of Kenyans do not have access to any form of health insurance and hence the paper tries to assess and identify the contributing factors to NHIF's improving but avertedly slow expansion. This study therefore sought to examine the effect of innovative strategies on improved performance of the National Hospital Insurance Fund.

1.3 Objectives of the study

The study was guided by the following objectives,

1.3.1 General objective

To determine innovative strategies influencing performance of NHIF

1.3.2 Specific objectives

1. To determine the effect of process re-engineering strategy on performance of NHIF
2. To establish the effect of benefit management strategy on performance of NHIF
3. To determine the effect of information communication strategy on performance of NHIF
4. To determine the effect of E-Banking strategy on performance of NHIF

1.4 Research questions

1. What is the effect of process re-engineering strategy on performance of NHIF?
2. How has the establishment of benefit management strategy influenced the performance of NHIF?
3. How has information communication strategy influenced the performance of NHIF?
4. What is the effect of E-Banking strategy on performance of NHIF?

1.5 Significance of the Study

The study was of important significance to NHIF, researchers, policy makers and private future researchers as was described as follows:

1.5.1 National Hospital Insurance Fund (NHIF)

The results of this study will be of foremost significance to the National Hospital Insurance Fund as well as other providers of health insurance services in Kenya- by providing findings on the effects of innovative strategies on the performance of the NHIF scheme. This will enable competitor health insurance firms to understand the underlying influences on the adoption of innovative strategies such as process re-engineering, benefit

management strategy, information communication strategy and E-Banking strategy adopted on fund pooling, membership increments and other measures of insurance fund success.

1.5.2 Researchers

The results of the study will also be of use to researchers such as; strategic management students at the Jomo Kenyatta University of Agriculture and Technology who aim to understand the dynamic between product innovative and market penetration in this case NHIF proliferation in Kenya.

1.5.3 Policy Makers

Based on the findings which will be presented, the study will benefit policy makers in the health financing industry in Kenya and perhaps even in neighboring east African countries with similar market dynamics -enabling them make relevant decisions involving 3rd party health financing matters such as which benefit packages are appropriate and how to move the market out of a predominantly fee-for-service health system.

1.5.4 Private Future Researchers

The study will assist private future researchers in the health research and this will aid the expansion of this study focus on other areas of health financing such as community based health insurance, private health insurance, self-insurance etcetera.

1.6 Scope of the Study

The study focused on the effects of innovative strategies on performance of National Hospital Insurance Fund NHIF. The respondents of the study were the relevant staffs of NHIF who were based in Nairobi County.

1.7 Limitations

The study was limited to the National Hospital Insurance Fund. Therefore, the results were not indicative of the operational dynamics of any other insurance fund in Kenya. Information is difficult to access due to cultural biases associated with inquiring about the financial position of an individual and due to institutional preferences for anonymity and client confidentiality. It is also difficult to establish the consent needed to conduct such a study given the tradition of state corporations being bureaucratic about information sharing. This study intended to collect information from a selection of NHIF members as well as its staff -therefore permission was sought from the management of the NHIF. Transportation to the said institutions was also covered by a limited budget as well as payments for research assistants and the purchase of stationary and printing expenses. The timeframe for the completion of this study was also, very limited as is the geographical area of the study.

II. LITERATURE REVIEW

2.1 Introduction

This chapter elaborated on the theoretical framework by discussing the theories applicable for this research. The conceptual framework and empirical review related to the research problem will also be discussed together with a critique of the existing literature as well as a summary of the chapter and research gaps of the problem.

2.2 Theoretical Review

The study was based on the systems dynamic model theory and knowledge based model theory. The two theories were discussed in detail and were linked to the objectives of the study.

2.2.1 Systems Dynamic Model.

System dynamics (SD) is a methodology and mathematical modeling technique for framing, understanding, and discussing complex issues and problems. Originally developed in the 1950s to help corporate managers improve their understanding of industrial processes, system dynamics is currently being used throughout the public and private sector for policy analysis and design. Many firms report that "people are their best assets." In the public service realm such as NHIF is, people often are the only income generating asset. Depending on the problems such firm wish to address in order to stimulate value creation through management decision often involves the manipulation of qualitative/soft variables such as morale, productivity or work quality (Zack, 2001).

The systems modeling methodology of system dynamics is well suited to address the dynamic complexity that characterizes many public health issues. The system dynamics approach involves the development of computer simulation models that portray processes of accumulation and feedback and that may be tested systematically to find effective policies for overcoming policy resistance (Richardson, 2004). Although the use of qualitative variables is contentious, in System Dynamics Modelling, questions relating to attractiveness multipliers, human behavior in systems dynamic models SDM, idea mapping and soft variables created robust exchanges among academics and the professionals in the discipline (Homer, 2003).

It is believed that in many cases the challenges of dynamic complexity in public health may be effectively addressed with the systems modeling methodology of system dynamics. The methodology involves development of causal diagrams and policy-oriented computer simulation models that are unique to each problem setting (Sterman, 2001).

A system dynamics model consists of an interlocking set of differential and algebraic equations developed from a broad spectrum of relevant measured and experiential data. A completed model may contain scores or hundreds of such equations along with the appropriate numerical inputs. Modeling is an iterative process of scope selection, hypothesis generation, causal diagramming, quantification, reliability testing, and policy analysis (Forrester, 2004). The refinement process continues until the model is able to satisfy requirements concerning its realism, robustness, flexibility, clarity, ability to reproduce historical patterns, and ability to generate useful insights. These numerous requirements help to ensure that a model is reliable and useful not only for studying the past, but also for exploring possible futures (Forrester and Seng, 2004).

System dynamics modeling has been applied to issues of population health since the 1970s. Topic areas have included the following:-Disease epidemiology including work in heart disease, diabetes, HIV/AIDS, cervical cancer, chlamydia infection, dengue fever, and drug-resistant pneumococcal infections; Substance abuse epidemiology covering heroin addiction, cocaine prevalence and tobacco reduction policy (Robert, 2005); Patient flows in emergency and extended care (Wolstenhome,2004); Health care capacity and delivery in such areas as population-based health maintenance organization planning, dental care, and mental health, and as affected by natural disasters or terrorist act (Hirsh,2004) and Interactions

between health care or public health capacity and disease epidemiology(Homer,2003)

2.2.2 Knowledge Based Model Theory

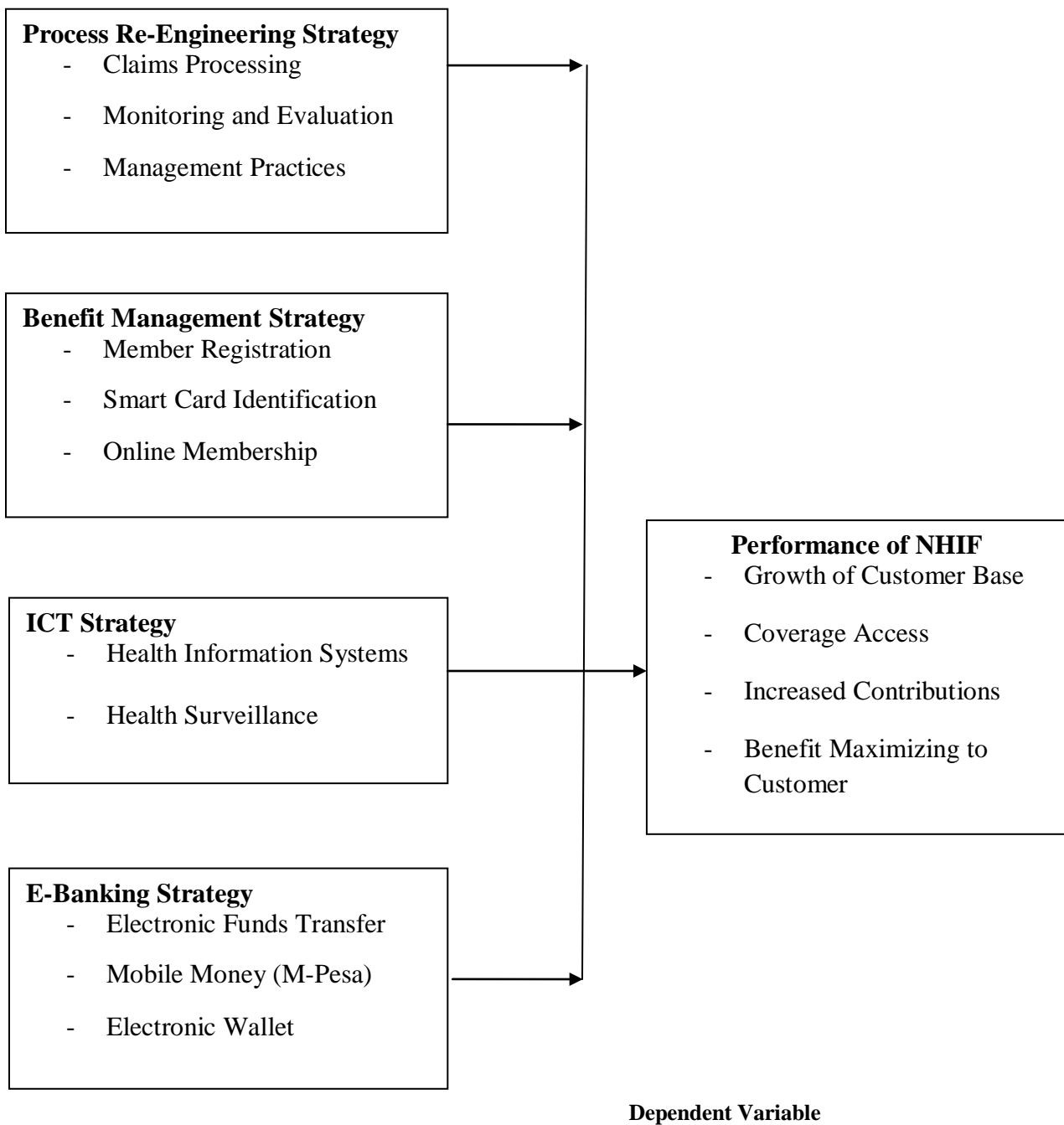
Sveiby (2010) defines 10 Knowledge based strategies to improve an organizations value creation;-These strategies are defined as knowledge transfers;- between individuals, from individuals to external structure, from external structure to individuals, from individual competence to external structure, from internal structure to individual competence, within external structures, from external to internal structures, from internal to external structures, within internal structures and finally the maximization of value creation. These are strategies that seek to improve knowledge transfers between 3 families of intangible assets so that the acting capacity of people both within and outside the organization is enhanced. The three families of intangible assets are external structure, internal structure and individual competence. The combination of internal structure and individual competence can collectively be called Knowledge Capital (KC) (Syed and Kaushar, 2010).

The external structure in knowledge based strategies refers to the external structure of the organization environment and can be referred to as a family of intangible networks such as members in the instance of the NHIF, the public and private hospital system, employers and beneficiaries of the NHIF fund. The value of external relationships to the firm is based on its ability to resolve customer problems and this, involves an element of uncertainty. Reputations and relationships may be good or bad and can change over time since they are partly dependent on individuals (Alavi and Leidner, 2001).

The internal structure involves; - internally directed actions whose entirety creates internal networks and structures within an organization which manifests itself in form of patents, models, templates, computer systems and other more or less explicit administrative tools and processes. These are create by the by the employees and owned by the organization. In the NHIF system, internal structures within the fund's organizational structure includes employee competences in all the NHIF's various departments such as Human Resources HR, Information technology IT, Management, etcetera. Internal structure is partly dependent on individuals however, even if the most valuable individuals leave the firm, at least part of both the internal and external structure will remain intact and will be a platform for a new start (Sveiby and Lloyd, 2006).

2.3 Conceptual Framework

The conceptual framework illustrates the relationship between the independent variables which include process re-engineering strategy, benefit management strategy, ICT strategy and E-Banking strategy and the dependent variable which in this case is the performance of NHIF.



Independent Variables

Figure 2. 1: Conceptual Framework

2.3.1 Process Re-Engineering Strategy

Evidence shows that increasing access to health care financing improves performance of national health insurance function. In countries such as Thailand, between 1990 and 2000 inequalities in health had been halved between the rich and the poor. This was attributed in part to the strategies that had been laid in place by the government with increased insurance cover at the fore front. Pro-poor health insurance schemes for instance improved the coverage of health services through initiatives such as subsidized voluntary health insurance and government welfare

schemes for children under 12 years and the elderly including efforts to scale up primary and secondary health services via health financing. With this initiatives increased utilization of essential medical services such as vaccination coverage rose from 20%-40% in the early 1980s and to over 90% in the 1990s; and skilled birth attendance rose from 66% to 95% between 1987 and 1999 (Vattanawong et al, 2007; Tangchwensathien, 2004).

In Kenya, subsidized insurance is not a reality yet however the NHIF has come a long way as observed by the steady growth in membership to the scheme. As of 2010, membership had

grown to 2.8 million members with membership split between the informal sector and the formal sector was at 500,000 and 2.5 million members respectively. The informal sector in particular has been a formidable frontier for membership growth with an increase in membership in 2010 compared to in 2005 when membership to the fund among the informally employed was less than 200,000 (NHIF, 2010). Due to this increase in membership, other variables such as the contribution levels have risen for NHIF members and their beneficiaries hence the payout ratio was reported to have improved due to NHIF efforts to increase the level of pay-out to benefits from 32% in 2006 to 54% in 2010 (MOH, 2010).

In terms of the waiting period for claims processing within the NHIF system, it has been a shorter process than private insurers who have traditionally paid over the course of 30 days. However, due to its structural adjustments through process re-engineering strategies on the current claims process, the current waiting period for processing undisputed claims by NHIF is 14 days –down from the previous 21 day wait period standard. In fact within the years 2005-2010, the rebates on inpatient package had been progressively increased by increasing the number of accredited hospitals on the NHIF network. The fund as of 2010 had contracts with 645 hospitals accounting for 44,299 beds in Kenya against a total of the 49,000 beds available country wide. NHIF covers cuts across various categories of hospitals from public to faith based and private hospitals and is by far the largest health insurer in the country (MOH, 2010).

In terms of financial sustainability of the NHIF fund is based around a pay-as you go premise / fee-for-service type arrangement and thus it is critical that that receipts (collections) are prudentially matched to expenditures. In Kenya unlike in other countries such as; - Germany, Chile, Philippines where contributions are from employers and the government, the viability of the NHIF scheme relies upon a matching process of claims to expenditures. Several factors interplay to ensure the long term financial sustainability of the NHIF fund and these are;- the availability of sufficient revenues which depend on the ability to optimize membership contribution as well as a sustainable contribution rate; membership contributions such that the fund has managed to increase coverage at a rate above 10% and especially in the informal sector. However, variations in activity levels have been observed especially with inactivity among the informal sector compounded by the fact that the informal sector receives 33% of payouts besides paying 5% of contributions (GTZ, 2010).

The National Hospital Insurance Fund (NHIF) has negotiated fixed reimbursement rates for in-patient care to level off-peak costs of medical services to ensure the fund's sustainability. The reimbursement amount varies slightly with the level of provider, the diagnosis, and the type of care required. "Contract A" and "Contract B" providers are typically reimbursed through case based or fee-for-service provider payments. "Contract C" providers are reimbursed through a per diem rebate system. Claims are submitted by hospitals directly to the National Hospital Insurance Fund (NHIF), and then hospitals are paid for procedures and users are reimbursed. Most claims are reimbursed within 14 days of the claim received. This process is computerized and is designed to be transparent to the providers (NHIF, 2010). Moving forward, the NHIF intends to

increasingly employ case-based payments for inpatient services. As the NHIF adds outpatient care to the benefits package with implementation of the recently gazette changes, capitation to comprehensive-care facilities will be the intended payment mechanisms. The fee-for-service system has been identified as one of the key drivers of escalating health care costs, as it creates incentives to encourage over-servicing and supplier-induced demand (NHIF, 2008). The majority of services covered by the NHIF are delivered through private facilities, indicating a preference by the bulk of salaried workers (who make up the majority of those covered by NHIF) toward private providers rather than public institutions (NHIF, 2009).

Of overall health expenditures in Kenya, Secondary and Tertiary care providers traditionally absorb approximately 70% of health expenditures, though health centers and primary care units provide the bulk of services. Health personnel expenditures are high—accounting for about 50% of the budget—compared to expenditures on drugs, pharmaceuticals, and operations and maintenance. Expenditures for curative care constitute more than 48% of the total MOH budget (MOH, 2007). Health care facilities also receive payments from the Ministry of Health (MOH), which releases funds to the county and national level hospitals. Allocations to the county health centers and dispensaries are in the form of line-item budgets, whereas national level hospitals receive global budgets. Salaries to staff are paid directly by the MOH. Drugs are also procured centrally, by the Kenya Medical Suppliers Agency (KEMSA) and then delivered to county and local level facilities. At the local level, the process of disbursement of funds is slow, which causes uncertainty for the providers, impedes their planning process, and encourages county level managers to await funding before they procure services, and creates an incentive to under-service clients (MOH,2007).

2.3.2 Benefit Management Strategy

Health care organizations world over are working to make their systems more efficient through the implementation of benefit management strategies. In Kenya, the National Hospital Insurance Fund (NHIF) prints member ID cards in-house to reduce fraud and improve patient satisfaction. The NHIF is a government health care organization covering Kenyans for their in-patient medical needs. Workers earning more than a defined amount must contribute to the fund through payroll deductions. Membership is voluntary for self-employed workers. The fund then pays hospital benefits to members and their declared dependants out of the contributions received.

According to the NHIF Web site, the organization "operates under the social principle that the rich should support the poor, the healthy should support the sick and the young should support the old." An upgrade to their card system began in 2003, when NHIF administrators decided to add a magnetic stripe to their members' ID cards. Previously, members received manila cards with stamps affixed to them containing member information. In the formative years, photos were collected and merged into the NHIF database however; -Through this process, it emerged that the intricacies involved in collecting photos, enhancing database security and much, much more required a more efficient process. (NHIF, 2006)

In 2006, the NHIF began using a Fargo DTC500 Series Direct-to-Card Printer/Encoder to produce member ID cards.

NHIF administrators scanned a member's photo, merged it into the badging software and printed in a two minutes process. This has helped the organization save on merging and printing time and has given hospitals better service by making information readily available through an open access database. The initially felt advantages were cost savings from not having to reprint manila cards every year. The new plastic ID cards are more durable. The need to print stamps to affix to the manila cards were an archaic security measure that have been replaced by the magnetic stripe, which displays the contribution status of the member when the card is read by a card reader. The new cards contain less information than before, because the rest of the information is available in the database via the card readers. Because the card readers display the ID cardholder's photo, it's possible to identify the member and his or her dependents. With 480 installed readers in all of its accredited hospitals fraud is curbed. Access to contribution information from members, eligibility of members and confirmation of Customer case studies are enabled. With the introduction of a photo in the database, it is impossible for fraudsters to print forged membership cards. (Deloitte, 2010)

With this information instant decision are possible about whether or not the member is eligible for benefits, thus reducing inappropriate claims. The same information used by the NHIF to analyze the claim for payment is now available to hospitals even before they file the claim. Previously, a member would present a claim to the NHIF for processing, but since his or her dependents were not in the database, the claim might have been rejected. With the introduction of details and photos about dependents, the ratio of rejections to claims has gone down, providing better service to the members. Because the NHIF can easily identify members and their dependents, the incidence of fraud has also gone down.

2.3.3 Information Communication Strategy

Health Management Information Systems have mainly been concerned with the collection of epidemiological data in the past lacking the management subsystems that deal with human resources, finance, essential drugs, public health services such as preventive and promotive services, transport and other logistics, infrastructure, community services, research and laboratory services (EOCHs, 2000).

Data derived from administrative databases, such as claims, billing, vital records and service utilization, are being increasingly used for quality monitoring purposes. However, these databases often lack important patient care information, including physical examination and laboratory results. Nonetheless, there are numerous advantages to drawing on administrative data for quality monitoring purposes. Not only are data typically accessible and inexpensive, they are also available for a wide range of patient services, both inpatient and outpatient. In addition, these data are likely to be up-to-date, a distinct advantage when seeking to measure quality of care thus many countries are adopting electronic health records to improve the organization and accessibility of health care information feeds and processes (Papanicholas and Smith, 2013).

Such developments are crucial, especially in the face of an increasingly complex range of information feeds associated with similarly multidimensional care processes. EHR systems have become an essential component of health systems that are in

pursuit of high-quality, efficient and safe health care processes. Assuming that ongoing problems with the development of EHRs, such as the lack of standardization and unstructured text, are adequately addressed, their contribution to monitoring and assessing quality could be enormous. For example, consider the recent automated web-based risk assessment tool used in New Zealand for cardiovascular disease among adults aged 45 and over. While this data collection is primarily for clinical management purposes, the data may potentially also be used for monitoring population health and measuring health care performance (Papanicholas and Smith, 2013).

To this end, Health surveillance through population surveys are common and cover a range of topics, such as health status, living standards, drug use and prevalence of specific diseases. These surveys provide valuable information on health and health trends and also on risk exposure for national health insurance funds because of the large target population (every single citizen) and because the nature of the surveys is longitudinal with data collected over multiple years at both national and subnational levels. Where previously data collection was expensive that is, via post, telephone or personal interviews and the high methodological demands, and un-reliability of validity for certain types of data, due to the efforts by NHIF to integrate medical records to its data base via the introduction of smart cards, the data requirements for more accurate calculations of risk exposure will be possible (EOCHS, 2000).

Since the establishment of prototype Health Management Information Systems HMIS in 1980, several constraints have been an impediment to Health Information Systems growth as a modern management information system in Kenya most notably the lack of a written health information policy to ensure compliance and enforcement in reporting. Reporting from NGO and private health facilities is far lower than their share of health service provision (MOH, 2007).

Problems contributing to this are;- Low reporting rates (under 60% for most of the sub systems), making the data unrepresentative for management, planning and budgeting at all levels; Un-timeliness/late reporting; resulting in delays in data processing, analysis, utilization and outbreak response; Inadequate Health Records and Information Personnel and inadequate capacity for data analysis and management skills; Inadequate financial resources resulting in insufficient printing and distribution of data collection and reporting tools, equipment and its maintenance; Inadequate utilization and feedback of the available data at all levels and lack of management of information to support epidemiological data and inadequate capacity in the existing manpower; Lack of community based information systems in most county's and support for network of counties and by national level; Inadequate supportive supervision and monitoring of HMIS activities in the field leading to lack of verification at the point of collection; with many vertical programs being establishing their own database with no links to the main HIS- this has created disjointed information systems within the ministry and the lack of data repositories/ Data warehouse at all levels (GTZ,2010).

All these were also the pre-stated issues are identified as weaknesses of the current Health Information System HIS in all the clusters and hence the urgent need to strengthen these areas of weaknesses. The Ministry of Health (MOH) is still committed

to rebuilding its HMIS. This commitment is clearly manifested by the recruitment of the following key staff: Medical epidemiologists, Health Records and Information Officers and nurses and deploy them in PHUs to help strengthen the National and sub-national HMIS. The Health Management Information System in Kenya is the principal responsibility of one directorate within the Ministry of Health (MoH). Routine health data collection in Kenya is conducted through a network of some 5,170 peripheral health facilities [Peripheral Health Units or PHUs] and 234 hospitals that are distributed throughout the country in the 48 different health counties.

Within each county there are at least 2 Health Records and Information Officers as well as one Disease Surveillance Officer whose role is to collect data at the county level. Data collection registers are often improvised at the PHUs and reporting forms are not always available at all Public Health Utilities PHUs for monthly reporting of morbidity data and other health statistics. Effective coordination of health information is lacking, resulting in duplication and gaps in data collection, reporting, use and management of data. Consequently, vast amounts of data collected remain mostly incomplete, unreliable and unused. PHUs never receive feedback on the information they collected. . This genuinely affects the willingness of the PHUs staff to collect complete and accurate data. Though most counties have been provided computers for data entry and initial analysis, data is not computerized at county level (GTZ, 2010).

A primary reason for this is the absence of a relevant database for data entry and automatic indicator analysis. To this end the Kenya National Bureau of Statistics KNBS has assigned County Statisticians to each county (GTZ, 2010). The Health Records and information officers have been assigned to a number of key public health programs like malaria, reproductive health, disease surveillance and response, EPI, NASCOP, tuberculosis, nutrition and laboratory including laboratory. Capacity building of staff has not been consistent and not geared to information management and use. There are positions for Health Records and Information Technicians and Officers in all Government hospitals. The report of recent assessments (SAM, 2004 & MOH-FBO assessment 2007 draft reports) of the HMIS states that counties are understaffed and PHUs do not meet the staffing norms as stipulated in the Ministry of Health, Norms and Standards 2006. (GTZ, 2010)

Several key partners are supporting data collection of health data in the country. UNICEF is supporting data collection for the Expanded Program on Immunization (EPI). WHO, World Bank and CDC are supporting surveillance of communicable diseases [through the Integrated Disease Surveillance and Response or IDSR strategy – evaluated in August of 2003; The government of Denmark is supporting HIS through the Health Sector Program Support (HSPS DANIDA). Activities supported by the HSPS Danida include the rolling out of the automated Integrated County Health Management Information System and supporting the National HMIS in co-ordination of these activities. PEPFAR and Clinton Foundation through the MoH/NASCOP is paying salaries for some Key Staff of the Health Information Systems (HIS) deployed in each county. The Government of Kenya supports HMIS through the provision of infrastructure, payment of most staff and some office supplies (GTZ, 2010).

WHO supported the Service Availability Mapping (SAM) initial exercise in 2004 but support to update the database was not guaranteed. Capacity building of national and county staff has not been supported and individual initiatives have taken a leading role in M&E, Database management and Epidemiology. The development of Health Information Systems (HIS) Policy guidelines and a Strategic plan has not been supported since by any of the development partners and is critical to support the HIS linkages, operations and the M&E. USAID through the MoH department of Planning and Policy is supporting a National Health Accounts assessment survey from May 2007 to September 2007. The European Union is supporting HMIS in 2 Provinces (Eastern and Central) through a Health Sector Support Project (HSSP). Work plans for the HMIS are prepared annually. Senior MoH officials acknowledge that the legislation to support the collection, management and dissemination of health information is weak and not enforced. This, is outlined in the report of the needs Assessment study on health management information system for health sector monitoring and evaluation, 2004. “In 2000 - 2005, internal and external consultants undertook several studies of the existing HIS. The assessments identified the following problems: Underreporting; Lack of elaborate feedback at all levels; Lack of integration at various levels ; Inadequate capacities of HMIS staff; Too many data collecting and reporting tools (forms and registers); Too many indicators to monitor the sector; the lack of guidelines and policy to make reports mandatory; the lack of Standard Operating Procedures (SOPs); Inadequate data collection and reporting tools in PHUs; Inadequate supportive supervision to county’s; Majority of HMIS staff are untrained; Presence of many parallel data collection systems established by various programs and agencies, with very poor coordination among them. (NHIF, 2012)

The report also identified 6 priority actions to strengthen HMIS in the country, namely; Institute mandatory reporting from private providers and NGO facilities and this can be elaborated through provision of HIS policy guidelines; Building data collection, analysis and reporting capacity at the health facilities and at the county and national levels; streamlining the data collection process and establishing data warehouses at county levels and national level with linkages with all statistical units such as medical and immigration records and Conducting a census of health providers. The current HMIS system does not take into account the full range of providers in the country and NGO's operations are at times questionable and their contributions not well documented. Thus data mapping by the NHIF in conjunction with other government offices such as the KNBS and the MOH is crucial in order to develop and elaborate integrated harmonized data collection tools; to create a user friendly data capture systems with adequate linkages with all the statistical units; Develop a comprehensive HIS strategic plan which will support the HIS that will be buy in and supported by all stakeholders. Towards this goal the MoH has already conducted the following activities: Develop a list of health indicators through a consultative process; Train county and national Health Records and Information Officers in appropriate planning and basic use of reports for planning and support supervision; Provide computers to some counties for data

management and Mapping of staff from government Health facilities were conducted in 2004(Deloitte, 2010).

2.3.4 E-Banking Strategy

Providers are paid on a fee-for-service basis, with packages defined for each of the covered procedures and interventions. Claims submission and processing is cashless (electronic), allowing hospitals and insurers to submit claims and payments online.

The process for reporting and paying claims is designed to be simple and cashless from the perspective of the provider and beneficiary. In general, the process looks as follows: A patient comes to a provider to receive care and goes straight to the RSBY help desk; the patient's identity is verified via fingerprints; The patient visits the doctor who assesses his/her health condition; doctor prescribes a treatment; Assistant at RSBY help desk checks whether procedure is in the list of pre-specified packages. Procedures are priced/paid to the provider on a case-based payment system (If procedure is on list, appropriate prescribed package is selected, patient is scheduled for procedure, and the amount to be paid out is blocked-If not on list, help desk checks with insurer to price and get approval to conduct procedure, patient is scheduled for procedure, and the pre-determined amount to be paid is blocked); In-patient treatment is provided to the beneficiary; Upon release of beneficiary from hospital, Smartcard is swiped again with fingerprint verification. Beneficiary is paid by the hospital Rs. 100/- as transportation expense at time of discharge. The pre-specified cost of procedure is deducted from the amount available on the card; After rendering service to patient, hospital sends an electronic report and claim to the insurer/TPA; The insurer/TPA reviews the records and information and makes payment to the hospital (electronically) within a specified time period (agreed upon between insurer/TPA and hospital)

At present there are no quality standards being utilized by RSBY, but the national team is working with states and insurers to develop an incentive based quality management system for providers (e.g., a system where hospitals are graded according specific quality parameters and hospitals with better quality are paid at a higher rate by insurers) (NHIF, 2010).

2.3.5 Performance of NHIF

The performance of health financing as a core function of NHIF is about ensuring that sufficient financial resources are made available so that people can access effective health care. With regards to productivity, three specific sub-functions are distinguished: revenue collection, fund pooling and purchasing (WHO 2000). This involves;- Revenue collection (the process by which the health system determines and obtains financial contributions from households, enterprises, and other organizations including donors); Pooling sub-function (contributions are accumulated and managed in order to spread the risk of payment for health care among all members of a pool, instead of requiring that people pay individually for their health services) and Purchasing (the process by which pooled contributions are used to pay providers to deliver a set of health interventions) (WHR,2006).

A 'strategic' approach to purchasing implies a search for those interventions that are most cost-effective in reaching the health system goals i.e a calculated focus on performance criteria within each of the health financing sub-functions that is, the

independent variables is appropriate. The analysis of these criteria can be considered as a first step towards the overall evaluation of the performance of the NHIF (KPHSA, 2009).

With regards to external service quality, its generally agreed that efforts to improve NHIF's external service quality/effectiveness must be predicated on objectives related to: increasing coverage, increasing accessibility and improving services offered to members so as to provide real social protection. The key efforts should include:- the pursuit of strategies to enhance membership of targeting the remaining part of the formal sector; continued enforcement so as to reduce levels of inactive members; targeting informal sector in aggregate groups to reduce adverse selection (examples of aggregate groups include;- 'matatu' drivers) (Chacha, 2012)

Thus, the strategic purchasing of healthcare is a performance perspective that the study wishes to brush on. This involves; - moving away from rebates to more innovative and cost effective payment modalities for providers (e.g. fixed reimbursement, diagnostic related groups costing and capitation). This may entail: - moving away from current rebate based payment system that depends on length of stay, to more cost effective payment modalities for providers (fixed reimbursement, capitation). This is already being implemented, for instance through;- the maternity cover where costing is based on the cost of care; Reviewing payment modalities for each category of contract; driving incentive programs with facilities to partner in attracting and retaining members; publishing ratings of facilities to encourage high quality treatment of NHIF members. Utilizing costing data to inform purchasing decisions and negotiations (MOH, 2013).

Such measures have been previously observed to go a long way to increase efficiency and target to reduce the proportion of administrative costs to at least 22% (current internal target) through: Implementation of financial management activity-based costing framework based on the SHI functions. This could allow the NHIF to track and manage costs related to registration, collections, payment, and customer service, etcetera since the Fund should be in a position to know the cost of acquiring each member /beneficiaries and the cost of serving members; Aligning business processes to technology and human resource capabilities: NHIF's personnel expenses account for 71% of total administrative costs -Therefore a reduction in the proportion of administrative expenses requires a thorough review of the HR expenditure / staffing numbers. Aligning business processes to technology and human resource capabilities: NHIF's personnel expenses account for 71% of total administrative costs - Therefore a reduction in the proportion of administrative expenses requires a thorough review of the HR expenditure / staffing numbers. To achieve this, business processes that eliminate redundant manual processing where possible have gone a long way. For example, the claims payment process could potentially be -to a greater degree- paper-less based on NHIF's current technology capabilities. This adjustment results in a reduction of staffing requirements in this area who could be redeployed in other areas as necessary. However; this may be perceived as paradoxical due to the observed fact that such a move would affect employee loyalty and employee satisfaction which are by themselves measures of NHIF performance (Deloitte, 2010).

2.4 Empirical Review

Public health insurance performance is strongly associated with efficiency enhancing, structural changes to national health insurance funds which includes the growth of institutional complexity as well as perceptions towards these public health insurance schemes by both providers and the general public (Barber and Yao, 2010), (Daalingjong and Suklaar, 2012). In china for instance, three separate public insurance funds are run by the Chinese government i.e. New Rural Co-operative Medical Scheme NCMS, Urban Residents Basic Medical Insurance (UR-BMI) and Urban Employees Basic Medical Insurance (UE-BMI). The national health reform emphasizes building on progress achieved with the insurance reforms, and expanding coverage and benefits. Hence Major reforms had been achieved in public health insurance implemented through subsidies from the year 2003. The National Health Service Surveys (NHSS) reported that Chinas national insurance coverage in china had increased from 23 to 87% between 2003 and 2008, with coverage rates of 72% in urban areas and 93% in rural areas in 2008 (Center for Health Statistics and Information, Ministry of Health 2009). Other factors that have been observed to impact the success-or lack thereof of Public/ National Health Insurance Schemes in china were observed to be:-

Funding levels specifically contribution levels and subsidization -In the New Rural Cooperative Medical Scheme NCMS program; prior studies have documented large differences in published and actual reimbursement rates, attributable to insufficient funding. Studies have suggested that, if counties reimbursed patients with catastrophic illness at half of the published benefits, the fund would be exhausted and those with catastrophic illnesses would still face out-of pocket expenses of 80% (Herd et al, 2010).

Regional disparities in socio-economic characteristics - While the government had committed to funding a basic health service package and public health services, the definition of minimum levels of care differed regionally. Disparities were observed between and across urban and rural programs in terms of their financing and benefits, related to local government economic capacity. For the New Rural Cooperative Medical Scheme NCMS, a large share of the financing was borne by individuals and county level governments through tax revenues (Xu et al, 2009).

The design of public health insurance schemes also featured as a key determinant of the performance of public health insurance schemes. In china, significant variation by counties in terms of performance is based on how the New Rural Cooperative Medical Scheme NCMS is designed. Since population size varied widely by county and the risk pool at county level covers approximately 450,000 people on average. Counties that had adopted overall risk pooling perform better in terms of access to health care compared with counties that used individual risk sharing through Medical Savings Accounts MSAs for outpatient coverage and benefits (Xu et al, 2009). Coverage has increased rapidly, particularly for the rural population. Both the rural and urban residents' insurance schemes aim for broad coverage in the initial stages of reform.

Coverage for major catastrophic events featured as one of the most important determinants of the success of these public medical insurance schemes in China. Since at the time,

catastrophic events were not covered under the current programs although the reimbursement ceilings were scheduled to increase in 2010. Several studies had demonstrated that higher rates of insurance had been associated with increases in catastrophic expenses. Nationally representative data reported that, between 2003 and 2008, significantly more households had catastrophic health expenses (5.0 to 5.6%).⁴⁷ This could be attributed to relatively low reimbursement caps and rates, high deductibles and copayments, and the incentives for over prescription and use of technology in the existing health system. High numbers of newly insured individuals were speculated to have accessed hospital care without full information about total costs. Moreover, studies had also documented higher charges for insured patients (Pan et al, 2009).

High hospital utilization rates were hence driven by the reimbursement policy of the residents' insurance programs, which focused on inpatient coverage. Hospital admission rates nearly doubled in 2008 to 6.8% compared with 3.6% in 2003 based on the NHSS household data. Public facilities continued to rely on revenues from medicines and diagnostics for operational costs, and the incentives in provider payment mechanisms led to poor quality health care practices including the overutilization of services and medicines. In example, in 2008, intramuscular and intravenous injection rates were very high: 30 and 35%, respectively, of rural prescriptions and 13 and 32%, respectively, of urban prescriptions.⁵⁰ The NDRC sets the prices for many basic health care services, medicines, and diagnostics.

Pricing of services where generally the prices for basic services are set below cost, whereas prices for more sophisticated diagnostics and technology are set above costs. The government had at the time emphasized a zero profit mark-up policy for essential medicines, and this was targeted for implementation in 30% of counties. Before 2009, a 15% profit mark-up was permitted on medicines. Under pressure to generate operational costs, the pricing system provides incentives for overutilization of technology and medicines that have higher profit margins. Demand for medicines increase as their prices increase. Some hospitals have been reported to link physician pay directly to the use of sophisticated technologies such as CAT scans and brand pharmaceuticals with higher profit margins (Xu et al., 2010).

A particularly vulnerable group is rural-urban migrants and their families. Several studies have documented serious health problems among migrant families, including lower immunization rates, and higher rates of infectious diseases, occupational health problems, and maternal mortality. The central government is encouraging municipalities to include migrant workers in health insurance programs. Some municipalities that depend on migrant populations for labor have made efforts to address migrant populations into urban programs. Depending on the municipality, migrant workers may have the option of joining either the urban resident health insurance program or the urban basic medical insurance program under their employers (Rao et al, 2010). Typically the benefits packages for migrant workers are not as expansive as the UR-BMI or UE-BMI programs in the same municipality (Rao et al., 2010). Some local authorities have established plans for migrant workers, which amount to 4% of their total wages, rather than 8%, and no MSA.⁵³ However, employers face lower costs by switching migrant workers into the UR-BMI. Payment for services is required in advance, and

the schemes and benefits are typically not portable, which can be a barrier to access.

A focus group study on the performance of the National Health Insurance Fund in Ghana observed strong associations between patient perceptions of insurance providers and provider perceptions of insured patients (Dalinjoong and Suuk Lar, 2012). Various views about the NHIS in Ghana with the insured, uninsured, health care providers and health were varied. A selection of these views was as follows; - Views of insured clients. The insured discussants all agreed that the NHIS is very useful. It made access to health care services very easy. The cited advantages in support of the NHIS were the exemption from out of pocket payments at the point of consumption. Respondents from the focus group discussions were cited to have positive perceptions of the NHIS in Ghana because poor were exempted from selling household assets to pay for health care with the insurance acting as a safe guard from catastrophic health expenditure (FGD, insured men- Builsa). As a disadvantage, views from uninsured clients cited discontent with high premium payments for registration, delays in processing the insurance ID cards after registration, and the yearly renewal of the ID cards. The perceived limited benefit package of the NHIS and the unreliable nature of the insurance agents were other issues the insured were not pleased with. The insurance agents were accused of charging unofficial fees and also causing delays in the processing of the insurance ID cards.

Views of uninsured clients –as much as the uninsured clients also recognized the usefulness of the NHIS, they reported that they had seen insured clients accessing health care services without any payment, even with free feeding for those hospitalized (FGD, uninsured men-Bolgatanga). Others among the uninsured were of the view that the premium paid was high and hence a barrier for them to register with the NHIS (FGD, uninsured women-Builsa). The delay in obtaining the insurance ID cards and their yearly renewal were other issues that the uninsured complained about concerning the NHIS. The above issues therefore do not motivate them (uninsured) to subscribe to the NHIS: We have heard people complaining of delays and the yearly renewal of their insurance ID cards which is a bad thing. This doesn't encourage our registration (FGD, uninsured men-Builsa).

Views of health care providers' -Health care providers in the two districts indicated that the NHIS enabled providers to get funds in bulk to carry out their operations and to undertake minor infrastructural developments in the facilities. It had also made health care services accessible to the insured without any payment at the point of consumption. This was reflected in the high attendance by the insured. They attested to a phenomenal increase in attendance compared to the period when the NHIS was not in operation (In-depth interview, hospital accountant-Bolgatanga).

Providers also perceived that the introduction of the NHIS had led to service abuse by the insured. The insured frequent the facilities with minor ailments and even attend to collect drugs for their uninsured relatives and friends. Some insured clients even offer their insurance ID cards to the uninsured for a fee to use to access health care: (In-depth interview, hospital accountant-Bolgatanga). The high attendance and perceived service abuse by the insured had led to an increased workload for providers.

Providers experience long working hours with little or no break times. However, providers were not motivated enough by the NHIS and government to compensate for the heavy workload experienced.

Another major challenge disclosed by providers in the focused group discussion studies was the issue of delays in reimbursement. Providers were not paid for over six (6) months in both districts: For almost six (6) months, the insurance has not paid the hospital (In-depth interview, hospital administrator-Builsa). But the NHI Act (650) stipulates that providers should be reimbursed four weeks following the month for which claims were submitted. This was not the case and hence contravening the NHI Act (650). The main reason for the delay in payment was the inability of the National Health Insurance Authority (NHIA) to provide funds for payment. The NHIA seems to be overwhelmed with the amount of claims submitted by the various DMHIS for payment. This seems to be a result of the introduction of the new GDRG which had higher rates for payment than the previously fee for service charge. Although other possible reasons that could result in delays in payment included inadequate and incompetent staff in the facilities that were responsible for the submission of claims to the District Mutual Health Insurance Scheme DMHIS. For instance, some staff lacked knowledge of the computer software used for submitting claims to the DMHIS. Contentious claims between the facilities and the DMHIS could sometimes result in delays as well.

Due to the delay in reimbursement, providers were unable to procure drug and non-drug supplies for the smooth operations of the facilities: The delay affects our work, because if you don't have the logistics to work with.....tell me, assuming that you have run out of drugs, they (NHIA) have not paid you, where will you get the money to buy the drugs? The delay in payment had made providers resort to the issuance of prescription forms for insured clients to buy drugs out of the facilities. Another consequence of the delay in reimbursement was the fact that it had made some providers prefer clients who would make OOP payments for services to those with the NHIS cards: Some facilities in the South of the country have turned away people who are insured. It is true that some facilities and pharmacies would prefer people who will pay in cash to those with insurance, due to the delay in reimbursement (In-depth interview, hospital accountant-Bolgatanga). These OOP payments from the uninsured assist providers to run the facilities while they wait for the main payments from the NHIS. In addition, providers were handicapped in the payment of their casual employees. For example, cleaners and security men whose names were not on government's payroll are usually paid from internally generated funds mobilized by the facilities. Many studies on public health insurance in sub-saharan Africa were based on Community health insurance and the following contributing factors to the performance of public health insurance funds of the voluntary membership kind were observed.

2.5 Critique of Existing Literature Relevant to the Study

The NHIF is only mandatory for the formally employed thus in some manner it operates more like a community health insurance. CHI is a common denominator for voluntary health insurance schemes, organized at the level of the community, that

are labelled alternatively as mutual health organizations (Atim 2005; Criel and Van Dormael 2005), medical aid societies (Atim 2005), medical aid schemes (van den Heever 2007) or micro-insurance schemes (Dror and Jacquier 1999). The common characteristics are that they are run on a non-profit basis and they apply the basic principle of risk sharing. Recent reviews of CHI have been published in the literature (Bennett 2004; Ekman 2004; Palmer et al. 2004).

Other financing methods for the public health insurance scheme NHIF, which would circumvent political and organizational difficulties at the national level, are thus often under explored in Kenya such as the direct involvement of communities in health financing. In the past, cost recovery for health care via user fees was established in many developing countries as a response to severe constraints on government finance (Deloitte, 2012).

Also, user fee policies have become an expression of community financing. However, most studies alert decision makers to the negative effects of user fees on the demand for care, especially that of the poorest households (McPake 2009; Yao, 2009). The involvement of the community in health financing has thus been spurred by among others, by the Declaration of Alma Ata in 1978 (Bose & Desai 2003), urging maximum community participation in organization of primary health care. Community financing for health is referred to as a mechanism whereby households in a community (the population in a village, county or other geographical area, or a socio-economic or ethnic population group) finance or co-finance the current and/or capital costs associated with a given set of health services which they are expected to gain participation in the management of the community financing scheme and the organization of the health services. Various forms of community financing exist: the most common being the payment of user fees for health care at the point and time of use.

There has been success in social/national health insurance schemes in developing countries such as Mexico, Costa Rica and South Korea (Carrin and James, 2004). However, other scholars' proponents of alternative insurance schemes such as mutual health insurance schemes, argue that these schemes also have the potential to increase access to health care. Mexico has, since the 1980s, implemented various initiatives to extend the coverage of its social health insurance scheme to poorer groups of its population (Frenk et al., 2005). Mexico's supposed success has been paraded as part of current global debates and advocacy for social health insurance. Lloyd-Sherlock (2006) notes that the current popularity of social insurance is related to the fact that it fits into the current development paradigm of social protection and risk management, which highlights the vulnerability of poor households to catastrophic health spending.

However, there is some evidence that social/national health insurance alone cannot significantly contribute to increased coverage rates, provide a wider risk pool and hence increase access to health care. There is equally anecdotal evidence to suggest that poorly designed schemes can have very negative consequences. Studies by Bennett et al (2005), Criel (2005) and Atim (2005) have expressed a similar view and are even less optimistic of community health insurance. They argue that their risks pools are often too small, adverse selection problems are frequent and the schemes are heavily dependent on subsidies,

which are most often infrequent and unreliable. Jütting (2003) notes that the schemes that experience managerial and financial difficulties the most are those in the environment of rural and remote areas where unit transaction costs of contracts are often too high.

The financial viability of social/national health insurance schemes is also a matter of concern. For example, Mossialos et al. (2000) report that France's social insurance contributions reached an untenable 55% of wage costs and the government had to propose a gradual shift to taxation, which is being implemented. Argentina was a major focus of externally funded. Lloyd-Sherlock (2006) notes that the Argentine reforms are now universally recognized to have failed, with the World Bank viewing the large public sector deficits generated by Argentina's insurance schemes as a major factor in the country's financial collapse in 2001. Jutting (2001) in a study of community schemes in Senegal also noted that community health schemes offer financial protection to those otherwise excluded but he also noted that the poorest of the poor are usually not covered. Such findings raise questions as to the extent to which national or social health insurance can be efficiently and effectively ran to provide adequate health care cover for all segments of the population and especially for the poorest and most vulnerable.

2.6 Research Gaps

From a performance perspective, there exists limited literature on policy performance of national health insurance schemes. To this end, the ability to develop partnerships to increase membership with financial service intermediaries such as SACCOs as they lobby to reform the NHIF 1998 Act upon being mandated by the Ministry of Medical services; the need to develop an operational strategy to cover indigents (Indigent cover will require additional funding from the Government), the progress on NHIF proposals to the Government such as a strategy on covering indigents; the need to reform the NHIF Act in order to provide additional funding, calculate funding required and work with development partners and other government agencies concerned with indigents and the need to increase the depth of cover are unexplored dimensions (Chacha, 2012)

Also missing from the literary scene is a review of the current benefit package and expansion into out-patient coverage from the existing in-patient cover that is; – reviewing the current benefit package and continuously communicating to all members the benefit packages; negotiating with providers to expand numbers under Contract A and B and the expansion of comprehensive cover to more facilities (Chacha, 2012)

Some studies on Health financing in Sun Saharan Africa observed that CHI can serve to increase access to care and offer financial protection against the cost of illness (Schneider and Diop 2004; Ekman 2004; Waelkens et al. 2004; Schneider & Hanson 2006; Gnawali et al., 2009; Chee et al., 2002; Jütting 2004; Musango et al., 2004). Despite that, a variety of operational difficulties hamper the successful development of health financing options in Africa. Thus it has been suggested that the research community's role in helping policy makers identify these difficulties and search for possible solutions is critical. Although public health insurance schemes were thought to be highly unlikely to become self-sustainable in the short and medium term, investments in CHI offered significant growth potential as a health financing option. The experience of

countries such as Rwanda, which have channeled foreign aid towards CHI development (Logie et al., 2008; Twahirwa 2008), shows how investments in CHI offer a unique opportunity to strengthen an entire health system, by consolidating its financing and promoting community mobilization, in view of the future prospect of achieving universal coverage (Ndiaye et al. 2007; Carrin 2003; Carrin et al., 2001; Waelkens and Criel 2004; Tabor 2005; Huber et al., 2002; Waelkens et al., 2004; International Labour Organisation 2006).

Since the ability of the single schemes to operate successfully is largely dependent upon the existence of a legislative and regulatory framework (Flessa 2006; Vinard and Basaza 2006; Waelkens & Criel 2004; La Concertation 2004; Huber et al. 2002; Letourmy 2006a; Basaza et al., 2007; Ndiaye et al., 2007; Logie et al., 2008), suggest that policy makers should in the very first place invest in the development of such a framework. The existence of a legislative framework in fact, often stands to signify an explicit political commitment towards a given policy. Field experience from Rwanda and Guinea has shown that such explicit political commitment can foster cooperation across schemes and promote foreign investments to enhance technical support for CHI development (Letourmy, 2006). Thus, Community Health insurance and Public Health Policy remain to be comparatively unexplored areas of study that may have a greater more significant bearing on public health insurance than previously thought.

2.7 Summary

The Theoretical Framework employed by this study, 2 models were selected i.e. the systems dynamic model and the knowledge based model. The Systems Dynamic Model was well suited to address the dynamic complexity that characterizes many public health issues. The system dynamics approach involves the development of computer simulation models that portray processes of accumulation and feedback and that may be tested systematically to find effective policies for overcoming policy resistance (Richardson, 2004). The Knowledge based model was defined by Sveiby (2010) as 10 Knowledge based strategies to improve an organizations value creation. These strategies were defined as knowledge transfers; - between individuals, from individuals to external structure, from external structure to individuals, from individual competence to external structure, from internal structure to individual competence, within external structures, from eternal to internal structures, from internal to external structures, within internal structures and finally the maximization of value creation.

Concerning the conceptual framework employed in this paper; -The conceptual framework illustrates the relationship between the independent variables which include Claims Processing, Magnetic Card System, Communication system and Electronic payment system and the dependent variable which in this case is the performance of NHIF.

Concerning the empirical review in this paper; -the paper reviews findings on public health insurance from China and

Ghana. It takes on 2 approaches i.e.;-the view that Public health insurance performance is strongly associated with efficiency enhancing, structural changes to national health insurance funds which includes the growth of institutional complexity as well as perceptions towards these public health insurance schemes by both providers and the general public (Barber and Yao, 2010).

Concerning the critiques of the reviewed literature in this paper;- The NHIF is only mandatory for the formally employed thus in some manner it operates more like a community health insurance. Thus, it is difficult to evaluate its performance on the same standard as state funded public health insurance schemes since it operates more like a mutual health insurance scheme such as a community health insurance scheme is (Bennett 2004; Ekman 2004; Palmer et al. 2004; Barber and Yao, 2010). User fee policies have become an expression of community financing, despite the fact that many studies alert decision makers to the negative effects of user fees on the demand for care, especially that of the poorest households (McPake 2009; Yao 2009) Voluntary contribution public health schemes box out the most vulnerable groups such as those in absolute poverty from accessing health financing and thus public health financing of this nature is limited in coverage growth to middle income and low income earners (Frenk et al., 2005). There is also evidence that social/national health insurance alone cannot significantly contribute to increased coverage rates, provide a wider risk pool and increase access to health care.

III. RESEARCH METHODOLOGY

3.1 Introduction

This section elaborated on the methodology which was used in the study. it will begin by describing the research design, target population, sample size, sampling procedure, research instruments, instruments validity and reliability, data collection procedure and data analysis and presentation.

3.2 Research Design

The study adopted the use of the survey research design. Mugenda and Mugenda (2003) defined survey as a method used to investigate populations by selecting samples from different occurrences. The main reason for selecting survey design for this study is because it allowed for cross referencing of responses from several respondents using the survey instrument.

3.3 Target Population

Francis (2005) defines population as the abstract idea of a large group of many cases from which a researcher draws a sample and onto which results from a sample are ultimately generalized. The target population of the study consisted of 601 employees of the 6 branches and 4 satellite offices of the National Hospital and Insurance Fund located in Nairobi County. See Table 3.1 below.

Table 3. 1: Target Population

Name	Status	Branch/Satellite Location	No of Employees
NHIF Head Quarters	Branch	Ragati Road	253
Westlands Office	Branch	Bandari Plaza	44
Nairobi Area Office	Branch	Laipha House	123
Ruraraka Office	Branch	Ruraraka	36
Buru Office	Branch	Mumias South Road	42
Industrial Area Office	Branch	Lunga Lunga Road	51
Kenyatta Hospital Office	Satellite	Kenyatta Hospital	21
Eastleigh Office	Satellite	Eastleigh	20
Gikomba Office	Satellite	Gikomba	5
Kangemi Office	Satellite	Kangemi	6
Total			601

3.4 Sample and Sample Techniques

In places of large target population, sampling enables the study of relatively small number of units. The use of sampling method was employed in this study so as to select a limited number of respondents from the entire population.

3.4.1 Sampling Frame

The study acquired information from National Hospital Insurance Fund which was used to develop the sampling frame. The sampling frame as previously mentioned included 6 branches and 4 satellite offices operating in Nairobi County. The target population of the study was the different employees working in the 6 branches and 4 satellite offices located in Nairobi County.

The study sampling frame consisted of a total of 601 employees from the 10 NHIF offices operating in Nairobi County. According to Mugenda and Mugenda (2003) when the population of a study is more than 10,000 individuals, 384 of are recommended for as the desired sample size given that the Z statistic is 1.96 at 95% confidence level as shown in the following formula.

$$N = Z^2 Pq / d^2$$

Where:

N = the desired sample size (When population is less than 10,000)

Z = the standard normal deviate at the required confidence level

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

q = 1-p

d = the level of statistical significance set

$$384 = \frac{1.96^2 (0.5)(0.5)}{(0.05)^2}$$

But since the target population was less than 10,000, the required sample size was calculated using the following formula:
 $nf = n/(1+n)/N$

Where:

NF = the desired sample size (When population is less than 10,000)

n = the desired sample size (when population is more than 10,000)

N = the estimate of population size

$$599 = 384 / (1/384) / 601$$

Since resources and time are a major constraint in deciding the sample size, the above procedure (target population less than 10,000) helped guide the study in determining the sample size. Gay suggests that at least 20%-30% of the accessible population is normally required for descriptive studies and 10% of the accessible population is required for experimental studies.

Therefore, as indicated above, the study being descriptive will use a sample of 20% of the desired sample size (599) as the actual sample size.

$$150 = 25\% \times 599$$

Therefore the actual sample size that the study considered was 150 respondents from the 10 selected NHIF offices in Nairobi County. See Table 3.2 below.

Table 3. 2: Sample Size

Name	Status	Branch/Satellite Location	No of Employees	%	Sample Size
NHIF Head Quarters	Branch	Ragati Road	253	43%	64
Westlands Office	Branch	Bandari Plaza	44	8%	10
Nairobi Area Office	Branch	Laipha House	123	21	31
Ruraraka Office	Branch	Ruraraka	36	6%	9
Buru Office	Branch	Mumias South Road	42	7%	11
Industrial Area Office	Branch	Lunga Lunga Road	51	9%	13

Kenyatta Hospital Office	Satellite	Kenyatta Hospital	21	3%	5
Eastleigh Office	Satellite	Eastleigh	20	3%	5
Gikomba Office	Satellite	Gikomba	5	1%	1
Kangemi Office	Satellite	Kangemi	6	1%	1
Total			601	100%	150

3.4.2 Sampling Techniques

Random sampling technique was employed in the study to achieve a desired representation of respondents from the 6 and 4 branches and satellite offices located in Nairobi County respectively. According to Francis (2005), random sampling technique ensures that each and every member of the population under consideration has an equal chance of being selected as part of the sample. The random sampling technique used ensured that subjects were selected in such a way that existing sub groups in this case NHIF employees from the different branches and satellite offices. The study then calculated the proportion of the population in each branch or satellite office and finally combined the results to obtain the required sample.

3.5 Data Collection Instruments

Primary data was collected using questionnaires. According to Mugenda and Mugenda (2003) a questionnaire is a set of systematically structured questions used by a researcher to obtain needed information from respondents. The main reason for choice of use of questionnaires is because they are very easy to administer to respondents and are moreover convenient for collecting information within a short period of time (Francis, 2005). The questionnaires will be used to collect primary data which will be obtained from the respondents which will be in the form of values obtained from operational definition of the variables in the study.

3.6 Data Collection Procedures

The study used self-administered questionnaires to collect primary data from the respondents. The main reason from use of the questionnaires is because it collects important information from the population since each item in it is developed to address the specific objectives and research questions of the study.

The questionnaires were distributed by the researcher to the 6 branches and 4 satellite offices of NHIF operating in Nairobi County. The researcher randomly selected employees at the different branches when administering the questionnaires. The questionnaires were accompanied by a brief introduction of the study and purpose of the study for the respondent. According to Mugenda and Mugenda (2003), breaching confidentiality, is a matter of concern to all respondents. In view of this, the study withheld the names of the respondents and their respective view with utmost confidentiality. During the data collection emphasis was given to the primary and secondary data.

3.7 Pilot Testing

The questionnaires were pre-tested to establish their reliability and validity before conducting the actual study. A Pilot study of 8% (12 respondents) of the desired sample size of 150 respondents was carried out at NHIF Head Quarters Offices: Ragati Road. According to Mugenda and Mugenda (2003) the purpose of the pilot study is mainly to pretests the instrument to ensure that the items in the instrument are stated clearly and have the same meaning to all the respondents. The pretest also enabled

the researcher assess the clarity of the instrument and assess the time taken to administer the instrument. The reason for choice of NHIF Head Quarters Offices: Ragati Road is because it has similar characteristics and features as the other NHIF offices located and operating in Nairobi County. The pretest will be subjected to the internal consistency technique using the Kuder-Richardson (K-R) 20 Formula which is as follows:

$$KR_{20} = (K (S^2 - \sum s^2) / (S^2 (K-1)))$$

Where:

KR_{20} = Reliability coefficient of internal consistency

K = Number of items used to measure the concept

S^2 = Variance of all scores

s^2 = Variance of individual items

A high coefficient will imply that items correlate highly among themselves indicating that there exists consistency among the items in measuring the concept of interest (Mugenda & Mugenda, 2003).

3.8 Data Analysis and Presentation

Data obtained from the study was analyzed and presented as follows:

3.8.1 Data Analysis

Data obtained from the field was cleaned, coded and key-punched into a computer and analyzed. Data was analyzed using quantitative techniques.

Quantitative data was analyzed using both descriptive and inferential statistics. The first step analyzed Descriptive statistics which was to meaningfully describe the distribution of results depending on the variables in the study and the scale of measurements used. Descriptive statistics such as Measures of central tendency (Mean, Mode and Median) and Measures of variability (range, standard deviation, frequency distribution, histograms, frequency polygons, bar charts, percentages and relationships) will be used in analyzing the data.

The study also sought to make inferences about the population based on results obtained from the survey. In this study, the researcher used inferential statistics one way and two way analysis of variance test (ANOVA) in analyzing whether there is a significant difference between two or more groups or samples at a selected probability level. This sought to analyze the probability that the variation among a group of sample means had occurred as a result of randomly selecting the samples from a common population (Mugenda and Mugenda, 2003). Two way analysis of variance (ANOVA) was carried out in the study which made three types of comparisons based on the different groups being analyzed.

The variables were rated in Likert scales which was used to measure perception, attitude and behaviour of the respondents. The numerical scales helped to minimize the subjectivity and made it possible to use quantitative analysis. The Likert scale

was in declarative form and it comprise of 5 response categories which will be in the following form:

1= Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree.

The study used SPSS V-20 statistical softwares to analyze quantitative data.

3.8.2 Data Presentation

Quantitative data was presented using instruments such as charts, tables and graphs. According to Mugenda & Mugenda (2003) quantitative data analysis involves presenting results in tables with explanations. Charts took into account the use of pie charts and bar charts. Graphs took into account the use of line graphs and tables took into account the use of frequency tables, pivot tables and contingency tables among others.

This chapter elaborated on data presentation, data analysis and discussion of the survey results. The presentation of the survey results was based on the order of the research objectives. Data collected was entered in MS excel, coded and exported to SPSS V 20 which was used to run the analysis.

4.2 Response Rate

The study administered 150 questionnaires to the target population. A total of 120 of the questionnaires were filled and returned. This indicated that the study achieved a response rate of 80% which was high enough for analysis as stated in Mugenda and Mugenda (2003). The survey covered the 10 branches and satellite offices of NHIF operating in Nairobi County.

4.3 Pilot Test Results

A pilot test on 8% (12) of the respondents from NHIF Head Quarters was carried out before the actual survey was undertaken. The results are shown in Table 4.2.

IV. RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

Table 4. 1: Pilot Test Results

Research Question	F Statistic Anova	One Way	Sig of P Value Anova	One Way	Sig of P Value Two Way Anova
What is the effect of process re-engineering strategy on performance of NHIF?	1.239		0.29		0.154
How has the establishment of benefit management strategy influenced the performance of NHIF?	1.754		0.076		0.055
How has information communication strategy influenced the performance of NHIF?	0.867		0.517		0.531
What is the effect of E-Banking strategy on performance of NHIF?	0.711		0.788		0.022

Kunder-Richardson Reliability Test Coefficient=0.8

The score obtained in one item was correlated with scores obtained from other items from the research instrument. The study obtained a Kunder Richardson reliability coefficient of $KR_{20}=0.8$. This showed that the survey items in the questionnaire were highly correlated among themselves thereby indicating a high level of consistency. This results obtained from the pilot study were also established to be highly reliable with high validity as well.

4.4 General and Background Information

This section dealt on the background information of respondents.

4.4.1 Gender of Respondents

54% (65) of the respondents interviewed were male whereas 46% (55) of the respondents interviewed were female.

4.4.2 Distribution of Respondents by Organization

Table 4.2 illustrates distribution of respondents by organization.

Table 4. 2: Distribution of Respondents by Organization

Branch Name	Frequency	Percentage %	Cumulative Percentage%
NHIF Head Quarters (Branch)	51	42%	42%
Westlands Office (Branch)	9	8%	50%
Nairobi Area Office (Branch)	25	21%	71%
Ruraraka Office (Branch)	7	6%	77%
Buru Buru Office (Branch)	8	7%	83%

Industrial Area Office (Branch)	10	8%	92%
Kenyatta Hospital Office (Satellite)	4	3%	95%
Eastleigh Office (Satellite)	4	3%	98%
Gikomba Office (Satellite)	1	1%	99%
Kangemi Office (Satellite)	1	1%	100%
Total	120	100%	

The survey carried out by the study focused on both the NHIF branches and satellite offices operating in Nairobi County. 42% of the respondents were from NHIF Headquarters (Branch) and 21% were from Nairobi area office (Branch). A total of 29% of the respondents were from Westland’s office, Ruaraka office, Burur buru office and Industrial area office. A total of 8% of the respondents were from the satellite offices which included

Kenyatta hospital office, Eastleigh office, Gikomba office and Kangemi offices respectively.

4.4.3 Education Level of Respondents

The survey results showed that 56% of the respondents interviewed had attained a University degree whereas 22% and 13% had attained Diploma and Certificates respectively. a paltry 9% of the respondents had attained a Masters Degree. Table 4.3 illustrates the Educational Level of Respondents.

Table 4. 3: Education Level of Respondents

Educational Background	Frequency	Percentage	Cumulative Percentage
Certificate	15	13%	13%
Diploma	26	22%	35%
Masters Degree	11	9%	44%
University Degree	68	56%	100%
Grand Total	120	100%	

4.4.4 Age Bracket of Respondents

Most (53%) of the employees of NHIF interviewed were between the ages of 31-35 years. Those between 25-30 years and

36-40 years were 21% whereas only 5% of the respondents were above 41 years old. Table 4.4 shows the Age Bracket of Respondents interviewed.

Table 4. 4: Age Bracket of Respondents

Age Bracket	Frequency	Percentage	Cumulative Percentage
31-35 Years	64	53%	53%
25-30 Years	25	21%	74%
36-40 Years	25	21%	95%
Above 41 Years	6	5%	100%
Grand Total	120	100%	

4.4.5 Respondents Duration of Service in Organization

40% of the respondents interviewed had served in the organization for 3 years, 28% had served in the organization for

more than 4 years whereas 22% and 10% had served in the organization for 2 years and 1 year respectively. Figure 4.1 illustrates the Respondents Duration of Service in Organization.

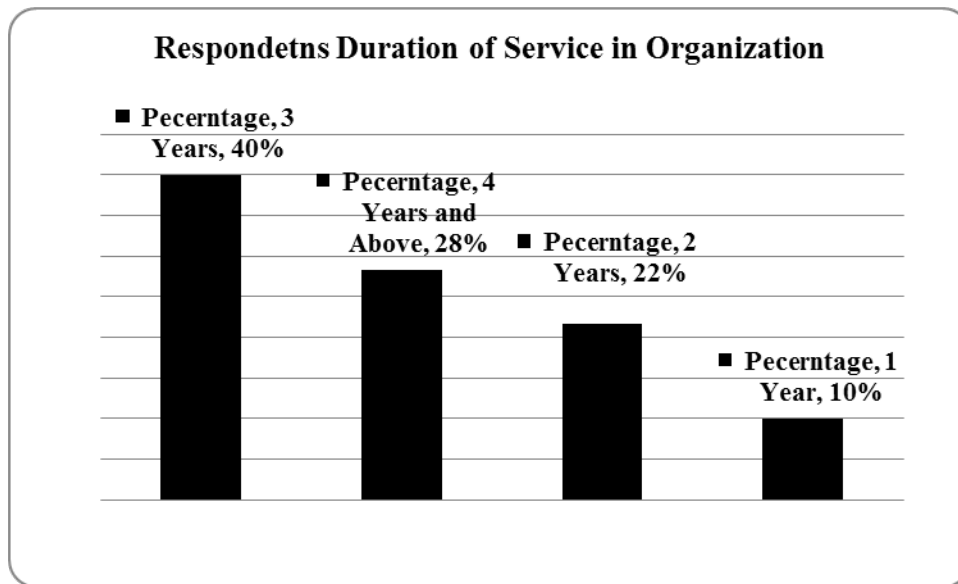


Figure 4. 1: Respondents Duration of Service in Organization

4.5 Descriptive Statistics

The study used frequency tables and percentages to describe the data.

4.5.1 Information on Process Re-Engineering Strategy

In an effort to establish the effect of process re-engineering strategy on performance of NHIF, the respondents were asked whether the new NHIF claims process had reduced the waiting period on NHIF reimbursement. 59% of the respondents were in agreement with 32% agreeing and 27% strongly agreeing. 29% of the respondents were in disagreement with 22% strongly disagreeing and 7% disagreeing. A paltry 12% were neutral on the matter.

On whether the new NHIF claims process had aided in the monitoring and evaluation of the scheme, 83% of the respondents

were in agreement with 45% agreeing and 38% strongly agreeing. Few of the respondents were in disagreement with 5% strongly disagreeing and 3% disagreeing. A paltry 9% were neutral on the matter.

On whether the new NHIF claims process introduced had improved management practices within the scheme. Most of the respondents were in disagreement with 33% of them disagreeing and 22% of them strongly disagreeing. 24% of the respondents were in agreement with 15% of them strongly agreeing that the NHIF claims process had improved management practices within the organization. 6% of the respondents were neutral about the matter. Table 4.5 illustrates the survey results on information on process re-engineering.

Table 4. 5: Information on Process Re-Engineering

No	Items on Information Technology	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The new NHIF claims process reduced the waiting period on NHIF reimbursement	22%	7%	12%	32%	27%
2	The new NHIF claims process has aided in the monitoring and evaluation of the scheme.	5%	3%	9%	45%	38%
3	The new NHIF claims process improved management practices within the scheme.	22%	33%	6%	24%	15%

4.5.2 Information on Benefit Management Strategy

In an effort to establish the effect of benefit management strategy on NHIF performance, the respondents were asked whether the membership registration in NHIF had improved due to the new strategy. Most of the respondents were positive on the matter with 44% agreeing and 17% strongly agreeing to the matter. 23% of the respondents disagreed and 4% of the respondents strongly disagreed on the matter with 12% of the respondents being neutral.

The respondents were asked whether smart card identification had reduced the incidence of fraud in the NHIF scheme, 52% of them were in agreement with 11% strongly agreeing that the NHIF card had helped reduce fraud. 22% of the respondents were in disagreement whereas 6% of the respondents strongly disagreed that smart card identification had helped reduce fraud in NHIF. Approximately 9% of the respondents were neutral concerning whether the strategy had had an effect on reducing fraud in NHIF.

The respondents were asked whether online registration had helped improve membership to the NHIF scheme. 44% of the respondents were in agreement with 32% of them strongly agreeing that online registration of respondents had an effect in growing membership for the scheme. 15% of the respondents

were however in disagreement with 4% of them strongly disagreeing and 6% being neutral on the matter. Table 4.6 illustrates the survey results on information on benefit management strategy.

Table 4. 6: Information on Benefit Management Strategy

No	Items on Benefit Management Strategy	Strongly Disagree	Disagree	Neutral	Agree
1	Membership registration in NHIF has improved due to the new benefit management strategy.	4%	23%	12%	44%
2	Smart card identification has reduced the incidence of fraud in the NHIF scheme.	6%	22%	9%	52%
3	Online registration has improved membership to the NHIF Scheme	4%	15%	6%	44%

4.5.3 Information on Information Communication Strategy

In an effort to establish the effect of Information Communication Strategy on NHIF performance, the respondents were asked whether the adoption of health information systems had reduced the waiting period on NHIF reimbursement. 33% of the respondents were in agreement and 30% of them strongly agreed that the adoption of health information systems had reduced waiting period on NHIF reimbursement. 21% of the respondents were in disagreement with 7% strongly disagreeing and 9% were neutral about the adoption of health information systems in reducing waiting period on NHIF reimbursement.

On whether the adoption of health information system had helped reduce the incidence of fraud in NHIF scheme, 30% of the respondents strongly agreed whereas 21% of them agreed

that incidence of fraud had drastically reduced within NHIF. 34% of the respondents disagreed, 6% strongly disagreed and 9% of the respondents stated were neutral about the incidence of fraud having reduced mainly because of the adoption of the new health information system.

On whether health surveillance through demographic surveys had led to an improvement of the ICT strategy within the scheme. 37% of the respondents were in agreement, 3% strongly agreed, 14% disagreed, 11% strongly disagreed and 5% were neutral on whether the health surveillance through demographic surveys had led to an improvement in the ICT strategy within NHIF scheme. Table 4.7 illustrates survey results on information communication technology.

Table 4. 7: Information on Information Communication Technology

No	Items on Information Communication Technology	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The adoption of health information systems have reduced the waiting period on NHIF reimbursement					7%
2	The adoption of health information systems have reduced the incidence of fraud in the NHIF scheme					6%
3	Health surveillance through demographic surveys have led to an improvement in the ICT strategy within the NHIF scheme.					11%

4.5.4 Information on E-Banking Strategy

In an attempt to establish whether information on E-Banking strategy had an effect on NHIF performance, the respondents were asked whether E-Funds transfer had eased the process of NHIF reimbursement. 29% of the respondents strongly agreed, 24% agrees, 22% disagreed, 21% strongly disagreed and a paltry 4% of them were neutral on whether E-Funds transfer had eased the process of NHIF reimbursement.

On whether Mobile money transfer had eased the process of NHIF contribution payments, 35% of the respondents strongly agreed, 33% of them agreed, 21% of the respondents disagreed, 7% strongly disagreed and 4% of the respondents were neutral.

On whether E-Money transfer had eased the process of reimbursement, 32% of the respondents were in agreement, 23% of them strongly agreed, 19% strongly disagreed, 17% disagreed and 9% of the respondents were neutral. Table 4.8 illustrates survey results on E-Banking strategy.

Table 4. 8: Information on E-Banking Strategy

No	Items on E-Banking Strategy	Strongly Disagree	Disagree	Neutral
1	E-funds transfers have eased the process of NHIF reimbursement.	21%	22%	4%
2	Mobile money transfer (eg. M-Pesa) has eased the process of NHIF contribution payments.	7%	21%	4%
3	E-money transfers have eased the process of re-imburements	19%	17%	9%

4.5.5 Information on Performance of NHIF

In terms of performance of NHIF, the survey results indicated that NHIF customer base had grown due to its innovative strategies with 37% strongly agreeing, 33% agreeing, 12% strongly disagreeing, 11% disagreeing and 7% being neutral.

The survey results also indicated that NHIF coverage in terms of supported hospitals had grown due to its innovative

strategies with 41% of the respondents agreeing, 34% strongly agreeing, 9% disagreeing, 6% strongly disagreeing and 10% being neutral.

Finally, in terms of contribution, the survey results indicated that NHIF contribution had grown due to its innovative strategies with 44% of the respondents agreeing, 33% strongly agreeing, 13% strongly disagreeing, 7% disagreeing and 3% being neutral. Table 4.9 illustrates information on Performance of NHIF.

Table 4. 9: Information on NHIF Performance

No	Items on Performance of NHIF	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	NHIF customer base has grown due to its innovative strategies	12%	11%	7%	33%	37%
2	NHIF coverage in terms of supported hospitals has grown due to its innovative strategies	6%	9%	10%	41%	34%
3	NHIF contribution has grown due to its innovative strategies	13%	7%	3%	44%	33%

4.6 Inferential Statistics

The study used one way analysis of variance and two way analysis of variance test results to infer more on the results.

4.6.1 One Way Analysis of Variance

One way analysis of variance test was carried out on the dependent and independent variables representing NHIF performance which was mainly attributed to the employees of NHIF scheme.

The one way analysis of variance was used to test for statistical significance in the difference of the performance means ascribed to the different NHIF strategies from the different branches and satellite offices.

The level of significance used in this study was 99%(0.01) mainly because of the high level of uncertainty which is attributed to using parametric hypothesis testing on data of

ordinal origins despite the fact that Likert responses were converted into scores and interval estimates.

There was a statistically significant difference in performance means for each innovative strategy (independent variable) between groups (NHIF Branches and Satellite Offices) as determined by one-way ANOVA significance probability results for process re-engineering strategy (F (9, 110) = 1.329, P = 0.230), benefit management strategy (F (9,110) = 1.698, P = 0.098), information communication strategy (F (9,110) = 0.843, P = 0.578) and E-banking strategy (F (9, 110) = 0.772, P = 0.643) at 1% (0.01) level of significance. The shows that, process re-engineering, benefit management, information communication technology and e-banking strategies positively influence the performance of NHIF across all branches and satellite offices. Table 4.10 below illustrates the results from the one way analysis of variance test.

Table 4. 10: One Way Anova Test Results

Independent Variable	One Way Analysis of Variance	Sum of Squares	Df	Mean Square	F	Sig. of P Value
Information on Process Re-Engineering Strategy	Between Groups	57.915	9	6.435	1.329	0.230
	Within Groups	532.451	110	4.840		
	Total	590.367	119			
Information on Benefit Management Strategy	Between Groups	94.111	9	10.457	1.698	0.098
	Within Groups	677.481	110	6.159		
	Total	771.592	119			
Information on information communication technology strategy	Between Groups	46.589	9	5.177	.843	0.578
	Within Groups	675.378	110	6.140		
	Total	721.967	119			
E-Banking Strategy	Between Groups	37.838	9	4.204	.772	0.643
	Within Groups	599.362	110	5.449		
	Total	637.200	119			

Dependent Variable: NHIF Performance Level of Significance 99%

4.6.2 Two Way Analysis of Variance

The two way analysis of variance was performed to determine the effect of the independent variables (process re-engineering strategy, benefit management strategy, information communication strategy and e-banking strategy) on the performance of NHIF which is the dependent variable. The level of significance considered for the two ways analysis of variance was 0.05 at 95% confidence interval. The groups considered for this analysis were the different branches and satellite offices of NHIF operating in Nairobi County. The independent samples/kruskal wallis test was carried out on each research question.

The results in Table 4.11 were generated from SPSS V 20 and they illustrated that the distribution of information on process re-engineering (P=0.122), distribution on benefit

management strategy (P=0.088), distribution of information communication strategy (P=0.534), and distribution of information on E-Banking strategy (P=0.016) was the same across the different NHIF branches/satellite offices surveyed and operating in Nairobi County. E-Banking strategy was observed to be statistically insignificant but SPSS V-20 still retained the research question. This could be explained by the fact that E-Banking strategy is spearheaded by the fiancé department and the responses from that department indicated that the strategy has positively influenced the performance of NHIF. Therefore, it can be concluded that there was no statistically significant difference in mean between process re-engineering strategy, benefit management strategy, information communication strategy and E-Banking strategy and therefore, all the research questions were retained according to the independent/Kruskal Wallis test.

Table 4. 11: Two Way Analysis of Variance Test Results

No	Research Question	Test	Significance	Decision
1	The Distribution of Information on Process Re-Engineering Strategy is the same across the different NHIF Branches/Satellites	Independent Samples/Kruskal Walis Test	0.122	Retain the Research Question
2	The Distribution of Information on Benefit Management Strategy is the same across the different NHIF Branches/Satellites	Independent Samples/Kruskal Walis Test	0.088	Retain the Research Question

3	The Distribution of Information on Information Communication Strategy is the same across the different NHIF Branches/Satellites	Independent Samples/Kruskal Walis Test	0.534	Retain the Research Question
4	The Distribution of Information on E-Banking Strategy is the same across the different NHIF Branches/Satellites	Independent Samples/Kruskal Walis Test	0.016	Retain the Research Question

Dependent Variable: NHIF Performance: Level of Significance 0.05

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter will focus on presenting the summary of findings per objective, the conclusion, recommendations and areas for further research which are based on the results of the study. These findings will be presented in a chronological sequence based on the objectives and study questions.

5.2 Summary of the Findings

The number of respondents of the study was 120 with a sampling rate of 80% from the NHIF branches and satellite offices operating in Nairobi County. To ensure the collection of rich information, the study focused on respondents who had diverse education backgrounds, different age brackets and who were from different branches and departments and had different duration of service in NHIF.

5.2.1 Process Re-Engineering Strategy

On the first specific objective, the study was to determine the effect of process re-engineering strategy on performance of NHIF. The study measured how the respondents rated the list of information on process re-engineering strategy presented by strongly agreeing, agreeing, strongly disagreeing or neither agreeing nor disagreeing. The results indicated that few respondents strongly disagreed with the information provided indicating that process re-engineering strategy had a positive impact on the performance of NHIF.

5.2.2: Benefit Management Strategy

On the second specific objective, the study was to establish the effect of benefit management strategy on performance of NHIF. The study measured how benefit management strategy is pursued in the following ways; whether membership registration in NHIF had improved due to the new benefit management strategy, whether smart card identification had reduced incidence of fraud in NHIF scheme and whether online registration had improved membership to NHIF scheme. The study used Likert scale to measure how the respondents rated the above information by strongly agreeing, agreeing, disagreeing, strongly disagreeing and neither agreeing or disagreeing (neutral). The results indicated that few respondents strongly disagreed with the information provided indicating that benefit management strategy had a positive impact on the performance of NHIF.

5.2.3 Information Communication Strategy

On the third specific objective, the study was to determine the effect of information communication strategy on performance of NHIF. The study measured how the adoption of health

information systems had helped in reducing the waiting period on NHIF re-imburement, incidence of fraud and whether health surveillance through demographic surveys had led to an improvement in the ICT strategy within NHIF scheme. The study used Likert scale to measure how the respondents rated the above information by strongly agreeing, agreeing, disagreeing, strongly disagreeing and neither agreeing or disagreeing (neutral). The results indicated that few respondents strongly disagreed with the information provided indicating that information communication technology strategy adopted had a positive impact on the performance of NHIF.

5.2.4: E-Banking Strategy

On the fourth specific objective, the study was to determine the effect of E-Banking strategy on performance of NHIF. The study measured whether E-Funds transfer had eased the process of NHIF reimbursement, whether mobile money transfer had eased the process of NHIF contribution payments and whether E-money transfer had eased the process of re-imburements. The study used Likert scale to measure how the respondents rated the above information by strongly agreeing, agreeing, disagreeing, strongly disagreeing and neither agreeing or disagreeing (neutral). The results indicated that few respondents strongly disagreed with the information provided indicating that E-banking strategy adopted had a positive impact on the performance of NHIF.

5.3 Conclusion

In view of the findings, this study established that the effects of different strategies employed towards the improvement of NHIF performance. Strategies play a critical role in improving performance of organizations and giving organizations directions. The study brought into light some of the main effects of the different strategies employed by NHIF in improving its performance.

Majority of respondents indicated that process re-engineering strategy has contributed positively to improvement of NHIF performance alongside the identified parameters that formed the basis of the questionnaire. Process re-engineering strategy is a vital component in enhancing the performance in terms of the growth of customer base, supported hospitals and NHIF contributions. On benefit management strategy, some of the key contribution factors for enhanced NHIF performance were membership registration, smart card identification and online registration of members. Most of the respondents indicated that benefit management strategy employed by NHIF has positively improved its performance in terms of the growth of customer base, supported hospitals and NHIF contributions.

On information communication technology strategy, what contributed to improvement of NHIF performance was the adoption of health information system which contributed to the reduction in waiting time and incidences of fraud. Also health surveillance through demographic surveys in improving ICT strategy was also a major contributor to NHIF performance. Most of the respondents indicated that information communication strategy adopted by NHIF has positively improved its performance in terms of the growth of customer base, supported hospitals and NHIF contributions.

On E-Banking strategy, what contributed to improvement of NHIF performance was the use of E-funds transfer which had eased the process of NHIF re-imbursements, Mobile money transfer which had eased the process of NHIF contribution payments and E-funds transfer which had eased the process of re-imbursements. Most of the respondents indicated that E-Banking adopted by NHIF had positively improved its performance in terms of the growth of customer base, supported hospitals and NHIF contributions.

5.4 Recommendations

The following are recommendations of the study based on the objectives and study questions.

Process Re-Engineering Strategy should be regularly applied especially at the branch and satellite level so as to enhance the performance of NHIF in terms of the growth of customer base, supported hospitals and NHIF contributions. Benefit management strategy is vital to the operation of organizations. This is key in helping with registration process, identification process and online services. This should as well be regularly applied and monitored so as to ensure the improvement of performance of NHIF in terms of the growth of customer base, supported hospitals and NHIF contribution. Information communication technology strategy is fundamental in enhancing efficiency in an organization. NHIF should regularly ensure that its ICT strategy and systems are fully functioning with minimal hitches as this contributes positively towards the improvement of its performance in terms of the growth of customer base, supported hospitals and NHIF contribution. E-Banking strategy deals with E-funds transfer easing the process of NHIF reimbursements, mobile money transfer through NHIF contribution and payments and E-Funds transfer in receiving reimbursements. NHIF should enhance this system so as to ensure that its performance in terms of customer base, supported hospitals growth and NHIF contribution continues to improve.

5.4.1 Suggestions for Further Research

The research gaps of this study were its focus on innovative strategies that contribute towards the improvement of NHIF performance. The study proposes that future research should be carried out in the following areas: To investigate effect of process re-engineering strategies on increased membership contributions to the NHIF scheme in Kenya and To investigate the effect of benefits expansion on NHIF membership in Kenya.

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APPENDICES

APPENDIX 1 : Introduction Letter

Dear Respondent

My name is Faith Mbogori. I am a Masters student at Jomo Kenyatta University of Science and Technology carrying out a research titles: Innovative Strategies influencing the Performance of NHIF in Nairobi County. Kindly assist me by filling this questionnaire for the completion of my research project. All information gathered will be treated with strict confidentiality since it is for study purposes.

Thank You.

APPENDIX 2: Questionnaire

Section I: Background Information

Name of NHIF branch Office: _____

Age; 25-30 yrs. 31-35 yrs. 36-40yrs above 41yrs

Which department do you represent?

Sales & Marketing Contact Centre Administration IT

How long have you served in your current organization?

1yr 2yrs 3yrs above 5yrs

How long have you served in your current position?

1yr 2yrs 3yrs above 5yrs

Section II:

A. Information on Process Re-Engineering Strategy

For this section, use a Likert Scale ranging from 1 to 5 (Where 5- strongly agree, 4- Agree, 3-Neither Agree nor Disagree, 2-Disagree, 1-Strongly disagree)

Process Re-Engineering Strategies		5	4	3	2	1
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	The new NHIF claims process reduced the waiting period on NHIF reimbursement					
2.	The new NHIF claims process has aided in the monitoring and evaluation of the scheme.					
3.	The new NHIF claims process					

	improved management practices within the scheme.					
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In your professional opinion what other sub-processes in the new NHIF claims process (not captured above) impact NHIF performance?

B. Information on Benefit Management Strategy

For this section, use a Likert Scale ranging from 1 to 5 (Where 5- strongly agree, 4- Agree, 3-Neither Agree nor Disagree, 2- Disagree, 1-Strongly disagree)

Benefit Management Strategy		5	4	3	2	1
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	Membership registration in the NHIF has improved due to the new benefit management strategy.					
2	Smart card identification has reduced the incidence of fraud in the NHIF scheme.					
3	online registration has improved membership to the NHIF Scheme					

In your professional opinion what other functions of Smart card identification are not captured above that affect NHIF performance?

C. Information on information communication technology strategy

For this section, use a Likert Scale ranging from 1 to 5 (Where 5- strongly agree, 4- Agree, 3-Neither Agree nor Disagree, 2- Disagree, 1-Strongly disagree)

ICT Strategies		5	4	3	2	1
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	The adoption of health information systems have reduced the waiting period on NHIF reimbursement					
2	The adoption of health information systems have reduced the incidence of fraud in the NHIF scheme					
3	Health surveillance through demographic surveys have led to an improvement in the ICT strategy within the NHIF scheme.					

In your professional opinion what other contributions to NHIF performance have communication systems made that have not been captured above?

D. E-Banking Strategy

For this section, use a Likert Scale ranging from 1 to 5 (Where 5- strongly agree, 4- Agree, 3-Neither Agree nor Disagree, 2- Disagree, 1-Strongly disagree)

E-Banking Strategies		5	4	3	2	1
		Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree
1	E-funds transfers have eased the process of NHIF reimbursement.					

2	Mobile money transfer (eg. M-Pesa) has eased the process of NHIF contribution payments.					
3.	e-money transfers have eased the process of reimbursements					

In your professional opinion what other contributions (not captured above) have Electronic Payment Systems made that affect NHIF performance?

E. Information on Performance of NHIF

For this section, use a Likert Scale ranging from 1 to 5 (Where 5- strongly agree, 4- Agree, 3-Neither Agree nor Disagree, 2- Disagree, 1-Strongly disagree)

Performance of NHIF		5	4	3	2	1
		Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree
1	NHIF customer base has grown due to its innovative strategies					
2	NHIF coverage in terms of supported hospitals has grown due to its innovative strategies					
3	NHIF contribution has grown due to its innovative strategies					

In your professional opinion what factors could contribute to NHIF performance In Kenya?