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Effect of Service Responsiveness on Customers' Satisfaction at the National Health Insurance Fund in Bungoma County, Kenya

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Abstract

The study sought to determine the effect of employee responsiveness on customers' satisfaction at the National Health Insurance Fund in Bungoma County, Kenya. The study used Expectancy-Disconfirmation Theory to develop a framework for evaluating how NHIF members' prior expectations of service responsiveness relate to their actual experiences and overall satisfaction. A cross-sectional study approach was used, with a target population of 3999 NHIF customers under SUPA cover in Bungoma county. A total of 364 respondents were sampled, of whom all participated in the study, giving a response rate of 100 per cent. Data were collected using Questionnaires, an interview guide and a documentary review. Validity of data collection instruments was determined by the principal component analysis technique. In addition, the instrument was given to a panel of experts and peers for examination, and the tool was modified accordingly after a pilot study in the neighbouring Busia County. Reliability and Validity indices were determined using Cronbach's alpha. SPSS version 21 was used to analyse raw data collected from the field, ranging from descriptive to inferential. In addition, the study also used thematic analysis to interpret qualitative data. Results indicated that service responsiveness has a statistically significant and positive relationship with customer satisfaction. The study put forth the need for regular auditing at the NHIF department to ensure that employees are accountable for their services. NHIF management should promote public participation and regular feedback to enhance customer satisfaction with service delivery.

1.0 Background of the study

1.1 Introduction

The global insurance industry is characterised by inconsistency in service delivery, and customers have continued to demand the same level of service every time a service has been rendered. The industry's recent objective is to increase its market share, but it can only achieve this objective if it can recruit new customers as well as retain the old one (I.R.A, 2022). Only insurance companies that dedicate their effort in delivering high-quality services will survive and achieve sustainable growth and profitability (Agha et al., 2017). In Germany, the health insurance sector has experienced increased competition, coinciding with a shrinking customer base and challenging economic conditions. Studies show that customer satisfaction significantly influences the decision to remain with a particular insurer (Ndebele *et al.,* 2021). Germany's health insurance system, which dates back to 1883, has expanded over time. However, despite its historical significance, the quality of service provided by the National Health Scheme (NHS) in Germany is perceived to be not satisfactory, leading individuals to opt for private health insurance (Focacci and Perez, 2022). The creation of the NHS in the UK in 1948 aimed to provide universal healthcare funded through general taxation, but issues regarding service quality remain a concern for policyholders (Bowles *et al*. 2023). To address this issue, companies in these countries need to focus on dimensions of service quality, such as responsiveness, reliability, assurance, empathy, and tangibility, to meet customers' expectations and improve the overall service quality of medical insurance schemes.

In Ghana, the National Health Insurance Scheme (NHIS) provides coverage for approximately 95% of the disease burden among its citizens (Nketiah-amponsah *et al*. 2019). Nonetheless, the scheme does not cover chronic illnesses such as cancer and renal diseases, which require substantial financial resources for treatment. As a result, Ghanaians are left with significant medical bills to pay. This situation raises concerns about service quality dimensions and satisfaction, particularly when considering the SERVQUAL model. Efforts should be made to bridge the gaps in coverage and improve service quality to ensure that health insurance schemes effectively meet the needs of the population in Ghana and other Sub-Saharan African countries.

Kenya National Hospital Insurance Fund is one of the earliest public insurance programs in Africa, which was established in 1966 by an Act of Parliament. NHIF was established as a department within the health ministry in accordance with Kenya statute section 255. The main goal of the National Health Insurance Fund (NHIF) was to guarantee that all Kenyans have access to affordable, high-quality medical care. All workers in the formal sector are required to join NHIF. The statute requires all employers to automatically collect and return the required amount through payroll. But contributory membership is available to those who work by themselves or in the informal sector. While the county government of Bungoma has made investments in healthcare infrastructure and encouraged residents to subscribe to NHIF services, improvement is needed to enhance customer satisfaction. Therefore, the study aims to examine the Influence of employee service responsiveness on customer satisfaction in Bungoma County, Kenya.

1.2 Problem statement

The National Health Insurance Fund (NHIF) is a vital pillar in extending essential healthcare coverage and financial security to subscribers across Kenya. However, a pronounced issue has recently emerged, highlighting a significant deficiency: a notable lack of service responsiveness displayed by NHIF employees towards their valued customers. This empathy gap has resulted in a tangible decline in the quality of service provided, consequently intensifying customer dissatisfaction. This unfavourable chain of events casts an apprehensive shadow over the overall efficiency and success of the NHIF scheme. NHIF members, who rely on this system not only for comprehensive healthcare but also for financial protection, are grappling with a concerning disconnect attributed to the evident lack of service responsiveness, compassion, and understanding exhibited by NHIF staff. This marked deficiency in responsiveness acts as a catalyst, inevitably leading to reduced customer satisfaction and undermining the very bedrock of NHIF's service quality. Chesire (2021) in the study on the NHIF service quality and satisfaction in Kenya, Langata sub-county, found that subscribers' health insurance satisfaction level increased with the cost of the service, though insignificant. The study by Oyando *et al.* (2022*)* On service Responsiveness found that, the NHIF benefit package inadequately covered the range of services needed by people living with non-communicable diseases (NCD), and the benefits package did not prioritise preventive and promotive services. A client who perceives responsiveness from his/ her insurer’s employees is bound to have higher satisfaction than a customer who does not perceive it from their insurer (Chege *et al.* 2019).

These studies shed light on the pressing need for a healthcare service approach that encompasses not only comprehensiveness but also service responsiveness. Despite governmental initiatives to enhance NHIF services—digitisation, increased budget allocation, expanded coverage, and stringent quality control measures for accredited healthcare facilities—concerns regarding service quality persist. These concerns encompass potential customer disillusionment, grievances, and the looming prospect of customers seeking alternative options. At the heart of this study lies an exploration of the intricate interplay between responsiveness and customer satisfaction within NHIF's operational framework. By delving into the nuances of how customers perceive responsiveness from NHIF personnel and its subsequent influence on their satisfaction levels, this research positions itself to bridge a pivotal gap that marks the existing body of knowledge. It is noteworthy that this study aims not only to pinpoint this gap but also to address it strategically through recommendations rooted in theoretical robustness and practical feasibility. The projected outcomes of this research, along with the ensuing recommendations, carry profound implications for key stakeholders, including NHIF, policymakers, healthcare providers, and subscribers. As the study unveils the pivotal role of employee responsiveness in enriching customer satisfaction, its ultimate aspiration is to cultivate a harmonious synergy between theoretical insights and pragmatic implementation. In doing so, it endeavours to facilitate an improved provision of services, nurturing a more content and engaged subscriber base. The objective of the study was to establish the influence of Employee service responsiveness on customer satisfaction at National Health Insurance in Bungoma County, Kenya. The study tested the following null hypothesis:

H_0: Employee service responsiveness does not have a significant influence on customer satisfaction at National Health Insurance in Bungoma County, Kenya.

The study aligns with Sustainable Development Goal 3 and Africa's Vision 2063 by enhancing healthcare, inclusivity, regional integration, and data-driven decisions. In Kenya, affordable healthcare is vital for universal coverage. Health insurance is key, as studies show it affects service use. The study benefits NHIF management, guiding service standards, strategies, and compliance. NHIF-accredited hospitals and policymakers also gain insights into improving service quality and client satisfaction. The research contributes to healthcare knowledge and consumer satisfaction research.

2.0 Theoretical Framework

In the assessment of service quality, the expectancy disconfirmation theory serves as a valuable framework for comprehending customer satisfaction and assessing service quality. It operates on the premise that customers enter a service interaction with certain expectations, which can be influenced by a range of factors, and then gauge their satisfaction based on the disparity between these expectations and their actual experiences. This theory not only identifies the positive, negative, or neutral disconfirmation that occurs but also highlights the direct correlation between the extent of disconfirmation and customer satisfaction (Nazari and Abdekhoda, 2021). While the theory simplifies the multifaceted nature of customer satisfaction and may overlook emotional elements, it offers practical utility and clarity to both researchers and practitioners. Its adaptability across diverse

industries, supported by empirical evidence, makes it versatile, allowing businesses to manage service quality, identify areas for improvement, and promote a customer-centric approach. In this study, the Expectancy-Disconfirmation Theory provided a structured framework for examining how NHIF members' initial expectations regarding responsiveness aligned with their actual experiences, shedding light on their overall satisfaction with NHIF services.

The rapid progress of artificial intelligence (AI) has transformed the customer experience and presented significant opportunities for businesses to interact with their customers through chatbots. Chen and Florence. (2021) conducted a study to explore the effects of the user-friendliness and promptness of AI chatbots on the online consumer experience in e-commerce. This research delved into the importance of AI in shaping the online customer satisfaction and experience role within e-commerce. It used a research framework based on the technology acceptance model to illustrate the relationships among chatbot adoption, the online customer experience, and customer satisfaction. This investigation employed a quantitative approach, gathering 425 valid online questionnaires. The findings of the study revealed that the usability of chatbots had a positive effect on the extrinsic aspects of customer experience, while chatbot responsiveness positively influenced the intrinsic aspects of customer experience. Moreover, the online customer experience showed a positive correlation with customer satisfaction and individual personality traits played a role in linking chatbot usability to extrinsic customer experience aspects. This study is consistent with that of Sadegh *et al.* (2017), who investigated the relationship between eight service responsiveness factors and total patient satisfaction in Tehran, Iran, public and private hospitals. 500 patients were chosen as respondents for the study using a practical sample technique from two public and three private hospitals. It used a cross-sectional research design. Data were collected using a dependable questionnaire with four items to measure overall patient satisfaction and 32 items to evaluate hospital responsiveness across eight aspects. The findings showed that patient satisfaction levels were highly impacted by hospital responsiveness. According to the report, health care facilities should make an effort to improve responsiveness to their strategic objectives and allow patient to participate in their treatment plans, including the choice of their own doctors. The study thoroughly analysed service delivery by taking into account four dimensions: empathy, responsiveness, reliability and assurance. In contrast to these earlier studies, which largely focused on the responsiveness as a single factor of service quality.

Arie et al (2023) Conducted a study focusing on the perceptions of migrants regarding the health care system’s responsiveness and customers’ satisfaction with healthcare professionals in South Africa. The research objectives included assessing the effect of reliability on customer satisfaction, examining the impact of responsiveness on customer satisfaction, investigating the effect of assurance on customer satisfaction, understanding the influence of empathy on customer satisfaction and exploring the impact of tangibility on customer satisfaction at the BRI unit Unsrat Manado. The research employed a descriptive cross-sectional design, with a sample size of 50 respondents consisting of loan customers/ debtors of the BRI unit. An analysis of data was done using the multiple linear regression model, utilising SPSS Statistics version 28, and employing purposive sampling. The results revealed that responsiveness, assurance, empathy, and tangibility dimensions exhibited a negative relationship and

did not significantly affect customer satisfaction. In contrast, SERVQUAL demonstrated a positive correlation and had a significant impact on Customer Satisfaction at the BRI Unit Unsrat Manado simultaneously. These results contradict the findings of an earlier exploratory research study conducted by D et al. (2019) On the relationship between customer responsiveness, service performance, and satisfaction among Airline Passengers in Kenya. During data collection, 6oo Passengers were randomly selected from the Eldoret International Airport lobby and provided with paper and pen questionnaires. A total of 426 usable questionnaires were collected. The outcomes of this study revealed that customers experience satisfaction when they are responsive to service workers. Furthermore, the study found that service quality plays a mediating role in the relationship between customer responsiveness and satisfaction, emphasising the critical role of the customer in the process of evaluating service quality.

3.0 Research Methodology

3.1 Research design

A descriptive cross-sectional research design was used in this study, which means that data were gathered from diverse respondents at one time. The design calls for the use of both quantitative and qualitative approaches, which were complementary in areas where one strategy in particular falls short. To gather data on characteristics that were assessed quantitatively, quantitative approaches were employed, whilst qualitative methodologies were used to find factors that cannot be quantified statistically. The descriptive cross-sectional study approach was utilised since it uses few resources, is affordable, and allows for the simultaneous data collection from all respondents. Additionally, it helps the researcher to confirm data from surveys and interviews, providing greater depth on the issue.

3.2 Description of the study area

The study was conducted in Bungoma County with NHIF policyholders under the SUPA package as the focus of this investigation. Bungoma County is a representative region of Kenya, both in terms of its demographic composition and healthcare infrastructure. Therefore, findings from this study can provide insights into the larger Kenyan context and potentially be generalised to other counties or regions in the country. However, the availability of two NHIF offices to enable Accessibility and availability of services in the county enabled the researcher to get respondents easily.

3.3 Population, sample, and sampling procedures

The study target population was 3999 respondents who were policyholders of the SUPA package. To ensure that the findings accurately reflect the opinions of both the general population and its subgroup, the respondents were chosen at random, and a simple random sample method was used.

The study employed Slovin's (1960) mathematical formula, which allowed the researcher to sample the population with a desired degree of accuracy (Bambang et al., 2021).

n= $N/(1+Ne^{2})$

Where n is the desired sample size

N is the total population that is 3999

e is the margin of error at 95.0% confidence interval. Therefore, the desired sample size was 364 respondents.

The study's relevant respondents were chosen using a stratified and simple random sampling technique. Bungoma County was divided into 45 wards, of which each ward served as a stratum for the sampling process. A simple random sampling technique was used to select respondents to ensure proportional representation of policyholders within each ward. This method gives every member of the population a chance to be chosen to participate in the study, thus minimizes level of bias (Etikan and Babatope, 2019). Additionally, by employing a combination of stratified and simple random sampling, this procedure ensured that the study captures a representative sample of policyholders on the SUPA package from various wards in Bungoma County, allowing for generalisation of the findings to the target population (Rahi, 2019).

3.4 Data sources and data collection methods

The study used both qualitative and quantitative data. The two types of data were utilised to complement each other since there were some questions that required both types of data. The study utilised both primary and secondary sources of data from the respondents under study area to achieve the objective and answer the research question. Primary data were obtained from NHIF subscribers in Bungoma County using a questionnaire. Primary data increased the reliability of the collected data since it was collected directly from the respondents and specifically for this study’s objective. The secondary data were obtained through reviewing existing literature on the influence of the service responsiveness dimension on customer satisfaction in published articles, magazines, and from insurance-related books and websites. Secondary data were used due to their cost-effectiveness. The well-structured questionnaire and Interview guide were the basic data collection tools for the collection of primary data from respondents. An interview guide was used for eight key informants to facilitate an in-depth collection of information from the respondents.

The questionnaire and interview guide used in this study were developed by the authors specifically for this research and have not been previously published. The instruments were constructed based on the study objectives, the Expectancy-Disconfirmation Theory, and relevant SERVQUAL dimensions, particularly responsiveness and customer satisfaction. The tools were subjected to expert review and pilot testing to ensure validity and reliability. An English version of the questionnaire and interview guide is provided as a supplementary file (Supplementary File 1).

3.5 Data analysis

Quantitative data were analysed using descriptive statistics by use of Statistical Package for Social Sciences (SPSS 25). The descriptive statistics, which include frequencies, percentages and mean were

used to examine the socio-economic characteristics of the respondents. The relationship between NHIF service responsiveness and customer satisfaction in Bungoma County was determined using a bivariate analysis of Pearson Product Correlation Index tests at a 5% level of significance. The correlation technique measured the degree and the direction of the relationship between variables, while regression measured the extent of the relationship (Xu et al. 2022). An ordered logistic regression model was used to analyse the influence of employee service responsiveness dimensions on customer satisfaction. An ordered regression model was chosen because it is useful in modelling the relationship between an ordinal response variable and one or more explanatory variables (Parry 2016). For qualitative data, messages gathered from Key Informant Interviews were analysed using thematic analysis and were transcribed, coded, themed, and contextualised under the study's specific objective.

Pearson correlation was used to examine the relationship between study variables. The correlation coefficient varies between + 1 and − 1. While a coefficient of + 1 indicates perfect positive correlation, -1 shows perfect negative correlation. A correlation coefficient of 0, however, designates that there is no correlation between the variables.

Correlation. (X, Y) = ∑(x-x') (y-y') / Square root of or √ [∑(x-x')2 ∑(y-y')2

Where X' and Y' are the sampling means

The ordered logistic regression statistical model was used in the study to examine the relationship between responsiveness and customer satisfaction. As a result, the ordered logistic regression formula below helped in describing the link between several independent variables (responsiveness dimensions) and a dependent variable (customer satisfaction).

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_p x_p + \epsilon$$

Where:

1. 1. y is the dependent variable (customer satisfaction).
2. 2. X_1, prompt feedback for complaint
3. 3. X_2, willingness to help
4. 4. X_3, prompt service delivery
5. 5. X_4 Flexibility in service delivery
6. *6.* β_0 is the intercept term.
7. 7. β_1, β_2, and β_p are the coefficients associated with each independent variable.
8. 8. ϵ represents the error term, which captures the variability not explained by the model.

The formula indicates that the dependent variable Y (Customer satisfaction) is an ordered combination of the independent responsiveness variables (prompt feedback for complaint, willingness to help, prompt service delivery, Flexibility in service delivery) weighted by their respective coefficients β_1, β_2, β_p, plus an error term ε.

The study performed an ordered logistic regression analysis for statistical measurement of the hypothesis to test the significance of the coefficient associated with the independent variable (in this case, responsiveness). A p-value less than α (0.05) means rejection of the null hypothesis and concluding that there is a significant influence of responsiveness on customer satisfaction at the NHIF in Bungoma County. When the p-value is greater than α (0.05), it would fail to reject the null hypothesis and conclude that there is no significant influence.

To enhance clarity regarding the operationalisation of study variables and their measurement scales, Table 1 presents the description of model variables used in the ordered logistic regression analysis.

Table 1
Description of Model Variables

Variable	Name	Definition of variables	Unit of measurement
Dependent variable			
Y	Customer Satisfaction	A measure of how pleased customers are with the service provided	Likert scale (Very dissatisfied = 1, Dissatisfied = 2, Neutral = 3, Satisfied = 4, Very satisfied = 5)
Independent variables			
X_1	Gender	Gender of the respondent	Male = 1, Female = 2
X_2	Age	Age of the respondent	Below 20 = 1, 21 to 35 = 2, 36 to 50 = 3, 51 to 65 = 4, 66 to 80 = 4, 81 and above = 5
X_3	Education	The highest level of education of the respondent	Primary = 1, Sec = 2, T, cert = 3, Dip = 4, Degree = 5, Masters = 6, PhD = 7
X_4	Responsiveness	The employee's willingness to help customers and provide prompt service.	Likert scale (1 = strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

4.0 Findings and Discussions

This chapter analyses the data on the influence of responsiveness on customer satisfaction in Bungoma county Kenya. The study used descriptive statistics to evaluate subscribers' demographic characteristics and ordered logistic regression, along with thematic analysis, to accomplish the study's objectives.

4.1 Respondents' Socio-demographic Characteristics

The study sample was 364 NHIF subscribers in the informal sector. Respondent's socio-demographics included gender, age, and education level. The respondents included farmers, business people, drivers,

private school teachers, retirees, security guards in private sectors, casual workers in different companies and institutions, school and hospital subordinate staff, and private institutions employees. The findings were presented using descriptive statistics as shown in Table 2.

Table 2: Distribution of the responses by socio-demographic characteristics (n = 364)

Characteristic	Frequency	Percentage
Gender		
Male	201	55.2
Female	163	44.8
Total	**364**	**100**
Age-group (yrs.)		
Below 20	11	3.0
21-35	100	27.5
36-50	129	35.4
51-65	81	22.3
66-80	39	10.7
81+	4	1.1
Total	**364**	**100**
Academic qualification		
Primary	19	5.2
Secondary	51	14.0
Tertiary/College	78	21.4
Diploma	96	26.4
Degree	87	23.9
Masters	23	6.3
PhD	10	2.7
Total	**364**	**100.0**

The respondent gender distribution showed that 55.2% (201) were male and 44.8% (163) female, indicating a higher proportion of male NHIF SUPA package subscribers in Bungoma County. This aligns with Asghari and Babu (2017), who reported more male health insurance subscribers in India, reflecting

gender differences in healthcare utilisation and men's role as primary breadwinners, prioritising coverage.

Age distribution revealed that most respondents (35.4%) were aged 36–50 years, followed by 27.5% aged 21–35 years, with smaller proportions in other age groups. This suggests that middle-aged individuals in the informal sector are more likely to subscribe to the NHIF SUPA package, possibly due to their combined family and health responsibilities.

Regarding education, 80.7% of respondents held post-secondary qualifications, with diplomas (26.4%) and degrees (23.9%) most common. This indicates that NHIF subscribers in the informal sector tend to have higher education levels, which may enhance awareness and uptake of health insurance. Lower participation was observed among those with only primary education, potentially due to financial constraints and limited understanding of insurance benefits. These findings correspond with Wantara and Tambrin (2019), who also found that middle-aged respondents predominated in related studies. The findings imply that higher education and middle age are associated with greater NHIF SUPA package subscription, while financial barriers may limit access for less educated individuals, who may resort to out-of-pocket payments or alternative healthcare options

4.2 Level of Customer Satisfaction in the National Health Insurance Fund

To assess the general level of satisfaction among NHIF subscribers, Table 3 presents the distribution of respondents' perceptions across key satisfaction indicators.

Table 3: Distribution of respondents by their level of satisfaction in the national health insurance fund (n= 364)

Item	SA	A	N	D	SD	Mean	*SD
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)		
Quality expectation fulfilment.	70(19.2)	157(43.1)	80(22.0)	39(10.7)	18(4.9)	3.61	1.07
Overall satisfaction.	74(20.3)	135(37.1)	81(22.3)	48(13.2)	26(7.1)	3.50	1.16
Staff knowledge and helpfulness.	77(21.2)	152(41.8)	88(24.2)	35(9.6)	12(3.3)	3.68	1.02
Recommending NHIF to others.	76(20.9)	157(43.1)	85(23.4)	31(8.5)	15(4.1)	3.67	1.03
Mean						3.62	

*Note: SD =strongly disagree, D = Disagree, N Neutral, A Agree, SA = strongly agree, *SD = Standard deviation*

When evaluating the fulfilment of quality expectations, 19.2% of respondents strongly agreed, and 43.1% agreed that NHIF services met their expectations, while 22.0% remained neutral, 10.7% disagreed, and 4.9% strongly disagreed (Mean = 3.61, SD = 1.07). The combined agreement level of 62.3% indicates a generally positive perception of service quality among subscribers, particularly those from the informal sector. However, 15.6% expressed dissatisfaction, and the significant neutral proportion suggests ambivalence. These findings are consistent with Haming *et al.* (2019), who emphasise empathy and responsiveness as key SERVQUAL dimensions influencing satisfaction. Qualitative feedback highlighted a perceived gap between promised and actual benefits, especially concerning out-of-pocket payments for services expected to be fully covered. This suggests that while overall perceptions are favourable, inconsistencies in benefit coverage undermine complete satisfaction and trust in service delivery.

Regarding overall satisfaction, 20.3% of respondents strongly agreed, and 37.1% agreed that they were satisfied with NHIF services, whereas 22.3% were neutral, 13.2% disagreed, and 7.1% strongly disagreed (Mean = 3.50, SD = 1.16). The majority (57.4%) reported satisfaction; however, 20.3% expressed dissatisfaction, and nearly one-quarter remained neutral, reflecting uncertainty in service evaluation. The mean score, positioned between neutral and agreement, indicates moderate satisfaction with room for improvement. These results align with Almansour and Elkrghli, (2023), who found that perceived usefulness, ease of use, credibility, and customer attitudes significantly influence satisfaction levels, yielding comparable mean ratings. This suggests that while NHIF meets the expectations of a majority, service enhancements are necessary to convert neutral and dissatisfied subscribers into satisfied clients.

In terms of staff knowledge and helpfulness, 21.2% strongly agreed, and 41.8% agreed that NHIF staff were knowledgeable and helpful, while 24.2% were neutral, 9.6% disagreed, and 3.3% strongly disagreed (Mean = 3.68, SD = 1.02). The majority (63.0%) expressed positive perceptions of staff competence, with a relatively small proportion (12.9%) reporting dissatisfaction. These findings further support Haming *et al.* (2019), highlighting responsiveness and empathy as critical determinants of service quality. This indicates that staff competence is a relative strength of NHIF, contributing positively to customer satisfaction and organisational image.

Concerning the likelihood of recommending NHIF to others, 20.9% strongly agreed, and 43.1% agreed that they would recommend the scheme, while 23.4% were neutral, 8.5% disagreed, and 4.1% strongly disagreed (Mean = 3.67, SD = 1.03). The combined agreement rate of 64% reflects a favourable overall impression of service quality, whereas 12.6% reported reluctance to recommend the scheme. The overall average satisfaction score across service quality indicators was 3.62, indicating a general tendency toward agreement. These findings are consistent with Hamisi (2018), who reported that satisfied customers were willing to recommend social security services based on positive experiences. This implies that NHIF has established a generally positive service reputation; however, addressing areas of dissatisfaction is essential to strengthen advocacy and long-term subscriber retention.

Nonetheless, the study sought to establish the relationship between service responsiveness and customer satisfaction. To empirically establish the relationship between service responsiveness and customer satisfaction, a Pearson Product-Moment correlation analysis was conducted at a 5% level of significance. The results are presented in Table 4

Table 4: Relationship between Responsiveness and Customer Satisfaction

		Responsiveness	Customer Satisfaction
Responsiveness	Pearson Correlation	1	.637**
	Sig. (2-tailed)		.000
	N	364	363
Customer Satisfaction	Pearson Correlation	.637**	1
	Sig. (2-tailed)	.000	
	N	363	363

Pearson product-moment correlation was carried out to establish the relationship between responsiveness and customer satisfaction. The test statistic was performed at a 0.05 level of confidence. Study findings indicated that there was a strong positive correlation between responsiveness and customer satisfaction. This implied that improvement in responsiveness results in a positive change in customer satisfaction.

In addition, to investigate the influence of service responsiveness dimensions on customer satisfaction, the study conducted an ordered logistic regression analysis. In this analysis, customer satisfaction served as the dependent variable, while four independent variables were examined: prompt action, willingness to help, prompt service delivery and flexibility, all of which were considered determinants of customer satisfaction at NHIF in Bungoma County. Since customer satisfaction was assessed using a 5-point Likert scale, it was treated as a discrete variable with five categorical values, where higher values represented greater satisfaction, ranging from 1 (very dissatisfied) to 5 (very satisfied). The results of the ordered logit regression analysis are presented in Table 5.

Table 5: Regression results on the Effect of service responsiveness on customer satisfaction

		Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Threshold	[CS = 1.00]	1.912	0.664	8.294	0.004	.611	3.214
	[CS = 2.00]	3.989	0.665	36.031	0.000	2.687	5.292
	[CS = 3.00]	5.628	0.701	64.494	0.000	4.254	7.001
	[CS = 4.00]	7.723	0.745	107.503	0.000	6.263	9.183
Location	Gender	0.121	0.201	.361	0.548	-0.273	0.515
	Age	0.141	0.097	2.086	0.149	-0.050	0.331
	Education	-0.066	0.072	.845	0.358	-0.208	0.075
	Prompt feedback	0.243	0.136	3.218	0.073	-0.023	0.509
	Willingness	0.415	0.158	6.920	0.009	0.106	0.723
	Prompt service	0.709	0.141	25.355	0.000	0.433	0.985
	Service Flexibility	0.250	0.119	4.402	0.036	0.016	0.484

Analysis was performed to assess the relationship between several independent variables (Gender, Age, Education, prompt feedback, willingness to help, prompt service delivery, and flexibility) and customer satisfaction, which is categorised into five levels. The thresholds, representing the cut-off points between different satisfaction levels, were evaluated. All threshold coefficients displayed p-values below 0.05, indicating statistically significant differences between these levels. Demographic variables of Gender, Age, and Education were examined. Their associated p-values from the Wald statistics suggested that Gender and Education do not have statistically significant relationships with customer satisfaction. While Age showed a marginal relationship, it did not reach statistical significance at the conventional threshold. ordered logit odds estimate for an increase in predictor values on the expected level of customer satisfaction, given that the other variables are held constant in the model. If prompt action of NHIF is to increase the ordered logit odds of being in a higher customer satisfaction category would increase by 0.243 while the other variables in the model are held constant. An increase in the willingness to help of NHIF would result in a 0.415 increase in the ordered log-odds of being in a higher customer satisfaction level category while other variables in the model are held constant. An increase in prompt service delivery of NHIF would result in a 0.709 increase in the ordered log-odds of being in a higher customer satisfaction level category while other variables in the model are held constant. An increase in flexibility in service delivery of the NHIF employees would result in a 0.250 increase in the ordered log-odds of being in a higher customer satisfaction level category while other variables in the model are held constant.

The Wald test statistic for predictor variables, prompt action is 3.218, associated with a p-value of 0.073, slightly above 0.05, implying a weak indication of a relationship but not statistical significance. In contrast, Wald test statistic of the predictor willingness to help was 6.920 associated with p-value 0.009 at a significant level of 1%, prompt service delivery is 25,355 associated with p-value 0.001 at significance level of 1%, and flexibility in service delivery is 4.402 associated with a p-value 0.036 at a significance level of 5% which demonstrated p-values below 0.05, indicating statistically significant relationships with customer satisfaction. Specifically, higher values in willingness to help, prompt service delivery, and flexibility in service delivery were associated with increased levels of customer satisfaction. The higher coefficient value of prompt service delivery as compared to the others implies that the predictive power of prompt service delivery is the best of all. This was supported by two of the key informants during the interview, who stated that:

"We do organise focus groups and user panels comprising NHIF members to engage in direct discussions about their experiences, needs, and concerns to get a deeper understanding of the customer perspective. This helps us to provide services promptly. We also established a dedicated customer service team that specialises in handling customer inquiries, complaints, and feedback" (KII 3 and 6, 2023).

The findings above indicate that engagement of NHIF with members through focus groups and user panels demonstrates a commitment to understanding customer needs. Their use of feedback for prompt service improvements and a dedicated customer service team highlights responsiveness and effective communication, fostering trust and satisfaction. These efforts underscore NHIF's commitment to enhancing the customer experience and satisfaction.

The next higher coefficient value, 0.415, is found in willingness to help, which indicates a strong relationship between willingness to help and customer satisfaction. The coefficient value of flexibility in service delivery also strongly predicts the level of customer satisfaction. The coefficient values of flexibility in service delivery and prompt action are 0.250 and 0.243, respectively, which indicate that they positively and statistically predict customer satisfaction. As pointed out by some of the key informants during the interview, revealed that:

In our corporation, we established a robust system to record and track customer complaints and suggestions. We analyse the data collected from these channels to identify recurring issues and areas for improvement" (KII 2, 2023).

"Our institution implemented systems to monitor customer inquiries and complaints in real-time. This enables NHIF to address urgent issues promptly and prevent escalation. We also conduct thorough root cause analysis of recurring issues and complaints to identify the underlying problems, such as lack of flexibility in service delivery, since we believe that addressing the root causes leads to more sustainable improvements in responsiveness" (KII 8, 2023).

The above findings implied that NHIF is committed to actively listening to its customers, promptly addressing issues, and making sustainable improvements. It aligns to enhance service responsiveness,

ultimately leading to greater customer satisfaction and loyalty.

Regarding hypothesis testing, for the hypothesis that there is no relationship between service responsiveness (prompt action, willingness to help, prompt services, flexibility) and customer satisfaction, the null hypothesis was not rejected for prompt action due to its p-value slightly above 0.05. However, the null hypothesis was rejected for willingness to help, prompt service delivery, and flexibility in service delivery, as their p-values were below 0.05, signifying significant relationships with customer satisfaction. The study therefore rejected the null hypothesis and concluded that there is a significant relationship between responsiveness and customer satisfaction. These findings disagreed with the findings of the research study by Arie *et al.*(2023) In a South African Province, which established that element Responsiveness, assurance, empathy and tangibility had a negative correlation and did not have a significant effect on Customer Satisfaction at BRI Unit Unsrat Manado, while SERVQUAL had a positive correlation and a significant effect on Customer Satisfaction at BRI Unit Unsrat Manado simultaneously. These findings imply that focusing on improving dimensions of service responsiveness, such as willingness to help, prompt service delivery, and flexibility, has a positive impact on customer satisfaction.

5.0 Conclusions and Recommendations

5.1 Conclusions

The study highlights the pivotal role of service responsiveness in shaping customer satisfaction. Hence, NHIF employees should consistently exhibit high levels of responsiveness by promptly attending to client inquiries and adapting to their specific requirements. Cultivating a strong rapport between NHIF employees and customers is of paramount importance. Administrative oversight mechanisms should be in place to ensure that services are delivered in a timely manner. Furthermore, NHIF should establish effective feedback mechanisms to continuously improve service delivery and meet evolving customer expectations.

5.2 Recommendations

Based on the conclusions drawn from the study above, the following areas can be explored in further research to deepen our understanding and potentially improve service delivery. Here are some recommended areas. First, we collected cross-sectional data, which has the limitation of making causal inferences. Future studies are recommended to collect longitudinal data. Second, our data were collected from existing NHIF service users in Bungoma County, and the majority were from the Luhya community. Future scholars should consider replicating the research model using samples from other countries. The study also recommends comparative studies between NHIF and other health insurance providers to understand how different service quality factors impact customer satisfaction in various contexts. To explore customer expectations regarding service quality in the healthcare and insurance industries.

6.0 Declarations

6.1 Ethical consideration

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (2013 revision) governing research involving human participants. Ethical approval was granted by the Moshi Co-operative University Research Ethics Review Committee, Moshi, Tanzania. In addition, a research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), Kenya, authorising data collection in Bungoma County. Clearance was further secured from the relevant county authorities before fieldwork.

6.2 Consent to Participate

Informed consent was obtained from all individual participants included in the study. Participation was voluntary, and respondents were assured of confidentiality and anonymity.

6.3 Consent for Publication

Not Applicable.

6.4 Funding Declaration

This research was funded by the Inter-University Council for East Africa (IUCEA) Scholarship. No other specific funding was received

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Primary data were obtained using a structured questionnaire (see Supplementary File 1: Data Collection Instruments).

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Englishversionofthequestionnaireandinterviewguide.pdf