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Influence of service assurance on customer satisfaction across Kenyan insurance companies: A multi-level data analysis approach

Catherine Njoki Chege [(a)*]

[(a)]*Lecturer, Zetech University, Kenya*

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ABSTRACT

This study sought to determine the influence of service assurance on customer satisfaction in the insurance industry in Kenya. The latent variable assurance was measured using four manifest variables namely, Employees instill customer confidence; Customers feel safe to transact with the company; Employee Politeness and Provision of adequate information on service requested. A descriptive research design was adopted and a multi-stage sampling technique was used to sample 400 policyholders from 19 composite insurance companies in Kenya. Primary data was collected using a structured questionnaire. A pilot test was conducted to check the reliability and validity of the questionnaire. Data analysis was performed using inferential statistics. R-Gui was the leading statistical software. The study applied linear mixed-effect models of structural equation modeling (SEM) considering the multi-level structure of the data collected. Multi-level analysis was adopted to determine whether service assurance contributed to the variation in levels of customer satisfaction across insurance companies. A significant fixed effect coefficient estimates of 0.696 was established, implying that increasing the levels of Service Assurance as perceived by a customer by one unit would increase the level of Customer Satisfaction by 0.696. The study concluded that a client who perceives Service Assurance from their insurer is bound to have higher satisfaction than a customer who does not perceive it. Employee Assurance, however, was found not to significantly affect the variations in customer satisfaction across the insurance companies. The study recommended that insurance firms invest in service assurance to achieve maximum customer satisfaction.

Introduction

The insurance industry is characterised by intangibility and inconsistency of services and hence the continuing pressure to sustain the same level of service every time a service has been rendered (Razali et al., 2017). The industry has recently entered into new businesses and is determined to enhance its market share (Insurance Regulatory Authority, 2016). This can only be achieved if it is able to get new customers and retain old ones. Customer satisfaction is closely related to future buying behaviour and patronage, making it a predictor of customer loyalty and retention, therefore, it is very important to organisations. There is a very strong connection between customer satisfaction and profitability and hence the need to understand the gap between customer expectations and performance perception (Angelova & Zekiri, 2011).

The SERVQUAL scale is used to determine among other things, the magnitude of the influence of service quality dimensions on customer satisfaction as perceived by the customer. Service Reliability was ranked the most significant determinant of customer satisfaction while Service Assurance ranked second, Responsiveness ranked third while tangibility and empathy were ranked the least significant (Parasuraman et al., 1988).

Studies have been conducted to determine the influence of service Assurance on Customer satisfaction in the insurance industry but none has used multi-level data analysis to determine the influence of service assurance on customer satisfaction across the insurance

* *Corresponding author. ORCID ID: 0000-0001-8494-2772*

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industries in Kenya. This study used multi-level data analysis to establish whether service assurance contributed to the variation in levels of customer satisfaction across insurance companies in order to fill the literature gap.

Literature Review

The literature review explained the theoretical foundation and the empirical literature that were used to support the study.

Theoretical review

The theoretical foundation was used to explain the issues that that motivated this research study and consisted of one theory known as the expectancy disconfirmation theory which supported service assurance as a determinant of customer satisfaction.

Expectancy Disconfirmation Theory

The expectancy disconfirmation theory was proposed by Oliver (1977). The theory described service quality as the degree to which customer expectations of quality before consumption are either confirmed or disconfirmed by the perceptions of the service experience. The theory consists of four elements; expectations, perceived performance, disconfirmation/dissatisfaction and satisfaction. Expectation was expressed as a situation where new users predict about performance of the service as a result of feedback from other customers, media or advertisements (Churchhill & Surprenant, 1982) while perceived performance referred to the experience of a customer after using the product which may be better or worse than they expected.

Disconfirmation was recounted as the inconsistency between customer's initial assumption and the observed actual performance. Three types of disconfirmations were outlined; positive, negative and simple disconfirmation (Oliver, 1980). Negative disconfirmation is where actual performance cannot meet expectation and leads to dissatisfaction while positive disconfirmation occurs when perceived performance is able to exceed expectation leading to satisfaction and simple disconfirmation is when perceived performance equals expectations (Spreng et al., 1996). Customer satisfaction is not only as a result of expectations but also from perceived information. If perceived information about a product or service satisfies their initial expectations then positive disconfirmation leads to satisfaction but if perceived doesn't match their initial expectations, negative disconfirmation leads to dissatisfaction (Swan & Trawick, 1981).

This theory is consistent with the service assurance dimension. Parasuraman et al. (1988) defined service assurance as the courtesy of employees and their ability to inspire confidence and trust. It involves politeness, friendliness, customer comfort and easy access to product/service information. These employee actions make customers feel safe to transact, they expect to interact with polite employees and receive adequate information on service provision so when they interact with employees who are polite and who inspire confidence in them simple disconfirmation occurs and if these expectations are exceeded then there is positive disconfirmation. On the other hand, if customers receive services from rude and unfriendly employees, they will become uncomfortable and similarly if they feel like they did not receive adequate information regarding the service to enable them make informed purchase decisions then negative disconfirmation will occur. And will lead to dissatisfaction.

Assurance and Customer Satisfaction

Knowledge displayed by employees during service delivery can be highly assuring to customers (Khan & Fasih, 2014. This makes the customers confident that the service providers will be ethical and professional. Naidoo (2014) contended that not all customers have the expertise to understand the quality of service and values they received, and as such require personal explanations or information regarding the services delivered.

Assurance dimension is facilitated through the people aspect of service quality (Kaura, et al., 2012). Suki (2013) put assurance as the strongest dimension while Sheetal and Harsh (2004), Kang and James (2004) and Jothi (2016) ranked it second most significant influencer of customer satisfaction. Madan and Pathak (2012) Anantha et al. (2014) and Devi and Prabhakar (2018) placed it as third in importance and Gautam (2011) concluded that assurance was the least important influencer of customer satisfaction in the insurance industry. Parasuraman, et al. (1988) found assurance to be one of the core dimensions of service quality that impacts customer satisfaction because it implants a favorable perception of an organization in the mind of a customer.

Assurance dimension of service quality focuses on employees that work in a company. Employees are skilled workers that customers trust and have confidence in during service delivery. If customers are not comfortable with their interaction with the employees, they cease their dealings with the company and take their money and patronage elsewhere. This discomfort leads to dissatisfaction. Therefore, customers must be satisfied with their face-to-face contact with employees otherwise the company will lose business. Kinyanjui (2013) found a strong relationship between assurance and customer satisfaction in Jubilee Insurance in Kenya. Rao and Sahu (2013) also established that assurance is an antecedent of customer satisfaction in the hotel industry in India. Khurana (2014) found that assurance affected customer satisfaction in Indian life insurance industry.

Sharda and Fatta (2018) concluded that service assurance has a significant influence on customer satisfaction and the study was consistent with numerous findings by Alemayehu and Dalega (2019), Bogale (2019), Ramadhan and Soegoto (2019), Getnet (2020), Niroshini and Niranjika (2020) and Upadhyay and Adhikari (2021). A study of the impact of service quality on customer satisfaction of life insurance companies in Sri Lanka (Sivesan, 2019) concluded that service assurance is the most important determinant of

customer satisfaction in the insurance industry. None of the above studies used multi-level data analysis to determine the influence of service assurance across insurance companies in Kenya. This study sought to fill this literature gap by determining the influence of service assurance on customer satisfaction across the insurance companies in Kenya using multi-level data analysis.

Research and Methodology

The objective of this study was to determine the influence of service assurance dimension on customer satisfaction and to further establish whether the variation in the levels of customer satisfaction was as a result of service assurance. Primary data was collected from insurance company policy holders who were subjected to a structured questionnaire. The collected data comprised of respondents' beliefs and opinions hence a Likert scale had to be used so as to examine how strongly the subjects agreed or disagreed with statements as proposed by Cooper & Schindler, (2011). The variables for this study included one independent variable, Assurance (X) and one dependent variable customer satisfaction (Y). A descriptive research design was adopted for the study. The study applied the linear mixed effect models of structural equation modelling considering the multi-level structure of the data collected. The following hypotheses was tested;

H_{01}: Service Assurance does not influence customer satisfaction in the insurance industry in Kenya

H_{02}: Service Assurance does not contribute to the variation in the levels of customer satisfaction across the insurance companies in Kenya

Target population

The target population constituted of policy holders (customers) of the insurance companies that offer both Life and Non-Life insurance policies in Kenya which are referred to as composite insurance companies. The population under study was considered to form a multi-level structure with two units of analysis. The primary unit of analysis was that of policy holders who are nested (clustered) within the secondary unit of analysis (insurance companies). There were 17 licensed composite insurance companies in Kenya as at December, 2017 that all together had a total of 1,695,312 policy holders (IRA, 2017).

Sampling Design

The study adopted multi-stage sampling which is a random sampling technique. Multistage sampling was designed to randomly sample level-2 units (insurance companies) followed by randomly sampling level-1 units (policy holders) from the selected level-2 units. Stage one involved selecting all the 17 composite insurance companies in Kenya which became the group size. Stage two involved sampling policy holders from a study population of 1,695,312. The sample size of the respondents (level-1 units) to include in the study was determined using the sampling formula;

Equation 1:

$$n = \frac{\mathrm{N}}{1 + N\,(e)^2}$$

Where, n was the sample size, N was the population size and e the confidence level (0.05). Using N = 1,695,312, the resulting sample size (n) was 400;

$\mathrm{n} = \frac{1695312}{1+1695312\,(0.05)^2}$

$\mathrm{n} = \frac{1695312}{4239.28}$

n= 399.906

n= 400

The formula was proposed by Israel (1992) where n is the sample size, N the population size which was 1,695,312 and *e* the permissible error which was taken as 0.05. The calculation resulted to a sample size of 400 policy holders across the 17 insurance companies. The 400 respondents sampled were distributed across the 17 entities based on the probability proportional to the size of the population of each company.

Data Collection

Primary data was acquired from policy holders of the composite insurance companies using a structured self-administered questionnaire. The questionnaire was in five-point Likert scale form.

Data Analysis

This study used R-Gui statistical software for descriptive, factor analysis and hierarchical regression analysis. The data collection instrument was subjected to the internal consistency and construct validity tests to determine its reliability and validity.

Considering the multi-level structure of the data collected, the study used Multi level Structural Equation Modelling (SEM) as the basis for testing the study hypothesis. Multi-level SEM was based on restricted maximum likelihood estimation (REML) for linear mixed effect modeling.

Measurement Model of Assurance

Table 1, is a summary of the measurement model for assurance. The table displays the path coefficients of the indicators in measuring the latent variable assurance between and within the insurance companies. The results show that all the indicators of assurance significantly load on the latent variable at both levels (between and within entities). All the loadings have critical ratios greater than the 1.96 Z score at 5% level of significance.

Table 1: Summary of Assurance Measurement Loadings

Level	Indicator	Latent variable	Factor Loadings	Standard Error	Critical ratio
Level 1 - client	ba1	assurance within	0.898	0.067	13.455
Level 1 - client	ba2	assurance within	1.033	0.064	16.228
Level 1 - client	ba3	assurance within	1.003	0.055	18.172
Level 1 - client	ba4	assurance within	0.945	0.053	17.781
Level 1 - client	ba5	assurance within	0.964	0.053	18.044
Level 1 - client	ba6	assurance within	1.230	0.057	21.543
Level 1 - client	ba7	assurance within	1.178	0.060	19.524
Level 1 - client	ba8	assurance within	1.178	0.060	19.745
Level 1 - client	ba9	assurance within	1.047	0.052	20.157
Level 2 - org	ba1	assurance between	1.147	0.318	3.612
Level 2 - org	ba2	assurance between	1.160	0.304	3.815
Level 2 - org	ba3	assurance between	1.291	0.226	5.718
Level 2 - org	ba4	assurance between	1.148	0.267	4.301
Level 2 - org	ba5	assurance between	1.229	0.213	5.769
Level 2 - org	ba6	assurance between	0.817	0.292	2.798
Level 2 - org	ba7	assurance between	0.682	0.261	2.613
Level 2 - org	ba8	assurance between	0.729	0.267	2.727
Level 2 - org	ba9	assurance between	1.145	0.255	4.494

The standardised factor loadings which are coefficient estimates are displayed with the standard errors and the critical ratios. All the manifest variables have significant factor loading at both levels as shown by the critical ratios (C.R.s) that are greater than the 1.96 z-score at 5% level of significance. The measurement model for assurance was thus fitted including all the indicators both levels. The fit indices of the assurance measurement model in Table 2, shows that the model met all the required cut-offs of both absolute and incremental fit indices.

Table 2: Fit indices; Assurance

	Chi-square						
	χ^2	Sig.	CFI	NFI	TLI	GFI	RMSEA
Statistic	798.941	0.000	0.965	0.903	0.992	0.951	0.065
Cut-off	P-value <0.05		≥0.9	≥0.9	≥0.95	≥0.9	≤0.08

Figure 1 is the path diagram detailing the measurement of the latent variable assurance by the manifests at each level. The diagram shows that all the nine manifest variables represented by the squares were retained in both levels with path coefficients represented by the standardised factor loading. The 2 circles indicate the latent variable assurance in the within (fixed effect) and between (random effect) models.

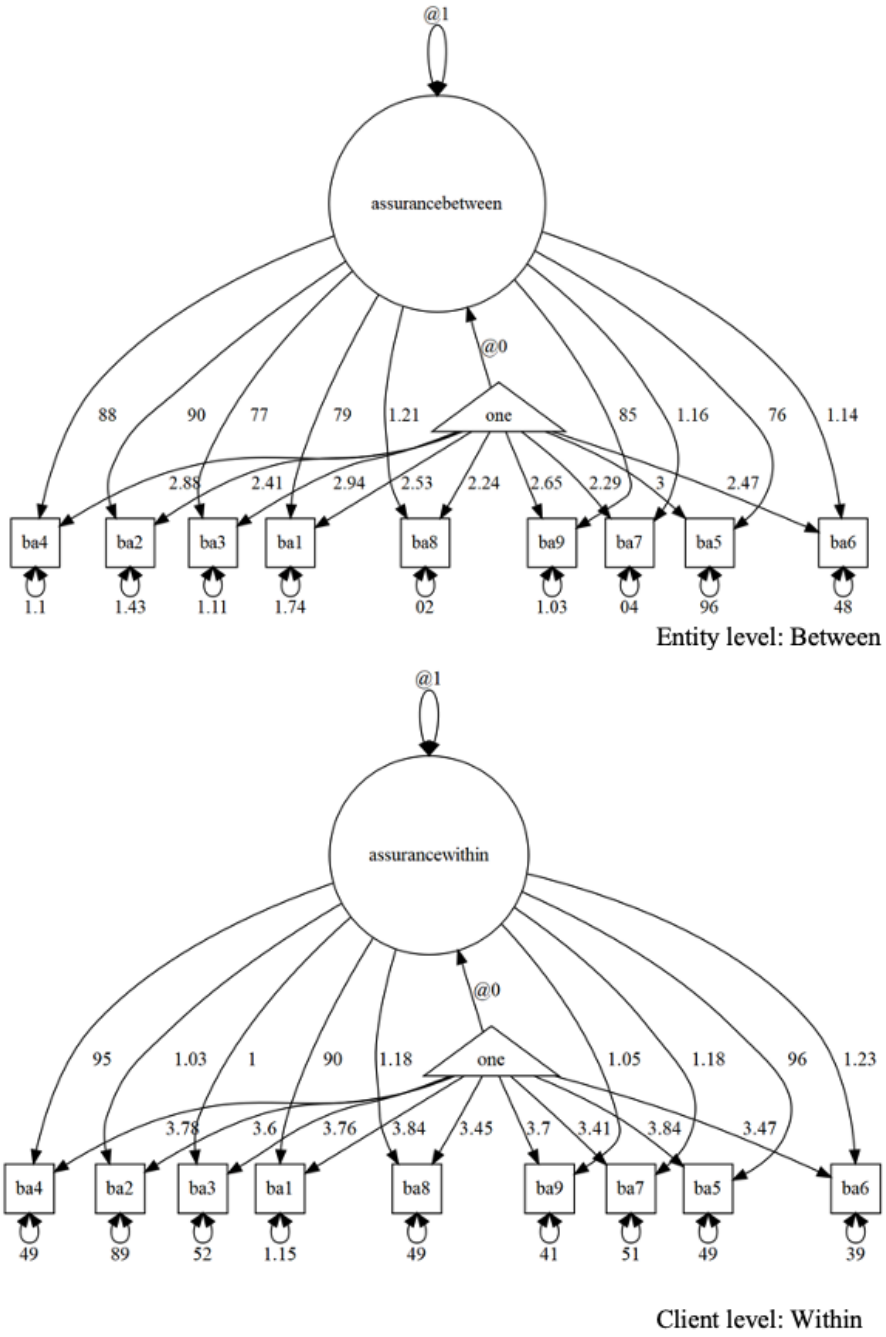

Figure 1: Path diagram showing the measurement of Assurance

Diagnosis of assumptions of Assurance Customer Satisfaction model

Assumptions of normality, heteroscedasticity and multicollinearity were tested. Maximum likelihood estimation holds the assumption that residuals of the model fitted follow a normal distribution. The diagnostics tests revealed violation of the normality assumption and homoscedasticity of residuals. Figure 2 shows the normality test for level 1 residuals. The Q-Q plots were used to assess the assumption of normality by comparing the distribution from the data to the theoretical normal distribution represented by the line which show that the residuals for this model generally seem to follow a normal distribution as majority of the plots lie along the line. However, a deviation from the line was noted by residual plots on the low end which implied a deviation from normality. The results show that level 1 residuals significantly deviated from normality.

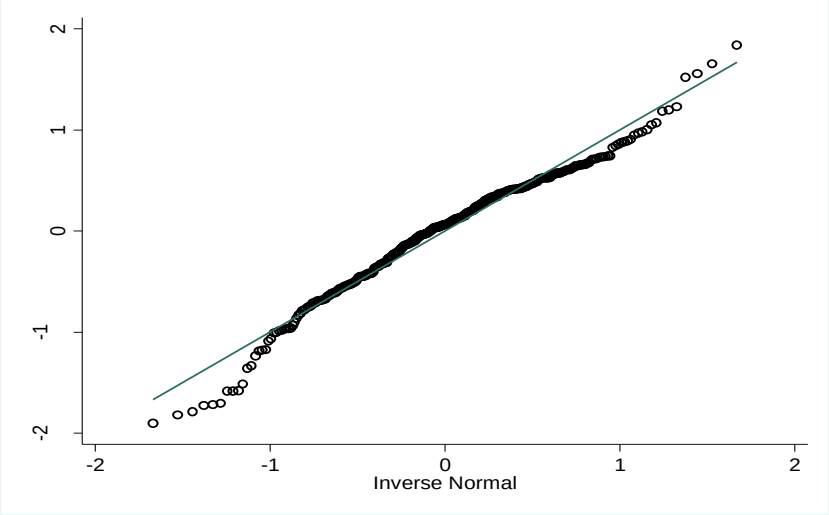

Figure 2: Q-Q plot for level-1 residuals; Assurance Customer satisfaction model

Hanging rootograms with confidence intervals (CI) were also generated to assess and confirm whether the residuals were deviating from normality or not (Figure 3). Some of the hanging roots of the level-1 residuals have confidence intervals within the zero mean. However, 5 of the hanging roots show residuals that are significantly greater or less than zero based on the 95% confidence intervals below or above zero. This shows that the level-1 residuals for this model significantly violated the normality assumption.

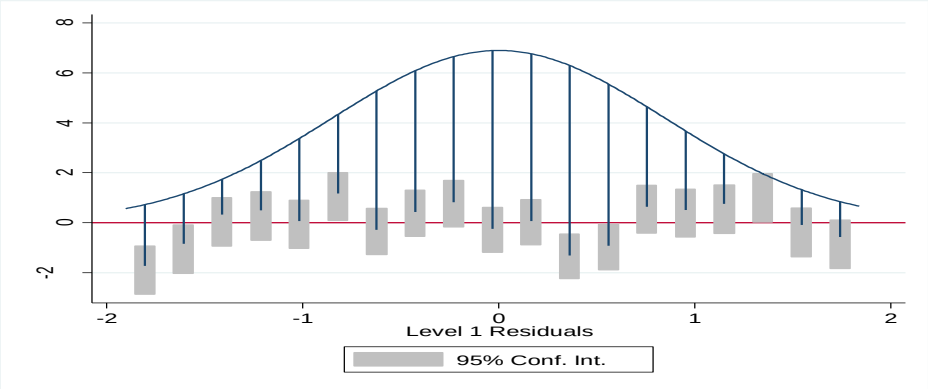

Figure 3: Rootograms for level-1 residuals; Assurance Customer satisfaction model

To further explore the nature of the distribution of level one residuals within each insurance company, q-q plots were fitted for each group (insurer) and presented as a line-up of q-q plots (Figure 4). Compared to the q-q plot of all the cases, the test by group showed no notable deviations from the theoretical normal distribution in any of the q-q plots. The plots were well aligned along the theoretical distribution line in each graph. this model, only the level-1 residuals within insurers 10, 12, 13, 15 and 17 showed deviation from normality.

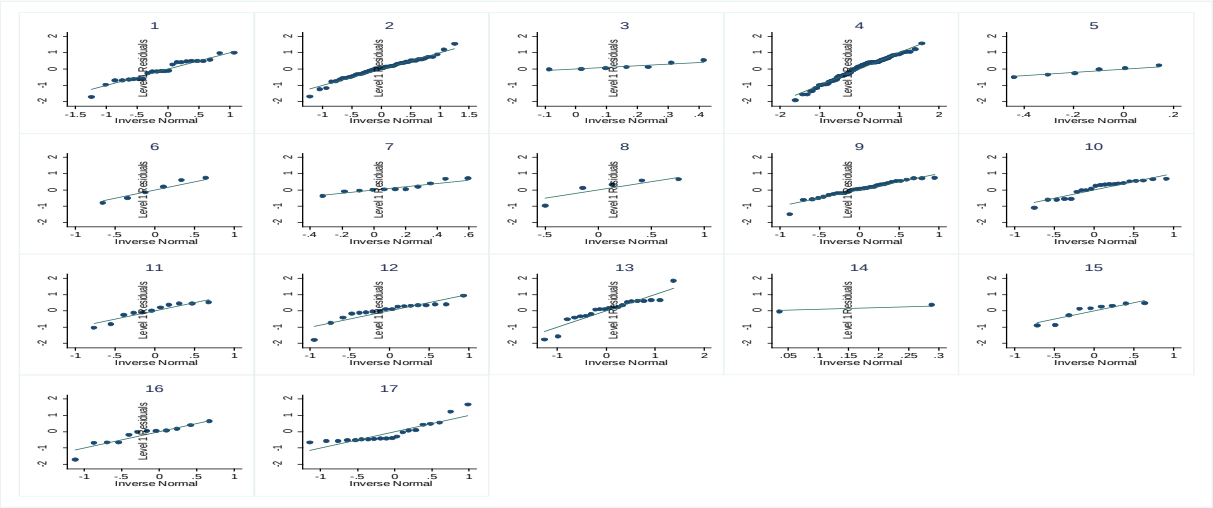

Figure 4: Q-Q plots line-up by insurer for level-1 residuals; Assurance Customer satisfaction model

Level 2 residuals based on the q-q plots showed possible deviations for this model fitted to assess the influence of service assurance on customer satisfaction (Figure 5). In this model, multiple level-2 residuals were considered as random covariates and as Random intercepts in the random effect. The level-2 residuals were BLUPs from the random intercepts (level-2 group constant terms) and the BLUPs from the random covariate. The results show elements of deviation from normality by both however the deviations from the line are more notable in the EB BLUPs of the random covariate assurance than on the random intercept BLUPs.

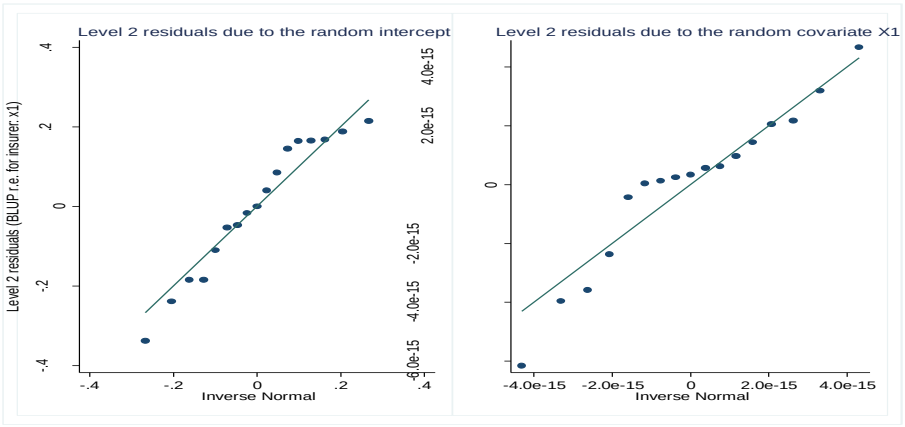

Figure 5: Q-Q plot for level-2 residuals; Assurance Customer satisfaction model

The hanging rootogram confirmed the deviation from normality in the level-2 residuals of this model (Figure 6). From the residuals due to the random intercepts, only one hanging root has the 95% confidence interval away from the theoretical distribution. For the residuals due to assurance as a covariate, most of the hanging roots were significantly lower or higher than the theoretical normal distribution line (Zero).

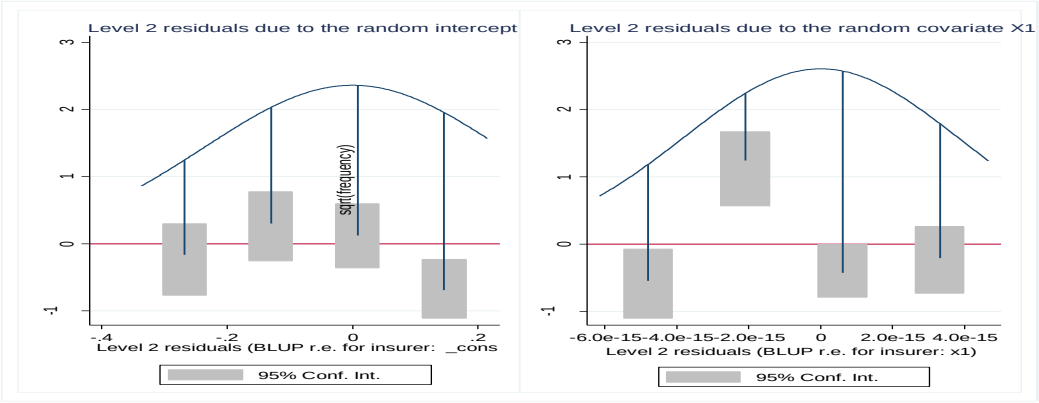

Figure 6: Rootogram for level-2 residuals; Assurance Customer satisfaction model

To assess homoscedasticity of the residuals at both levels, scatter plots of the residuals were graphed against the predicted values from the model. (Figure 7) shows the scatter plot of the level-1 residuals against the predicted values of customer satisfaction for all the cases in the sample. The results show a notable decreasing pattern on the plot above zero for lower predicted values and below zero for high predicted values. This is an implication of heteroscedasticity and a violation of the assumption on homogeneity of variance of level-1 residuals in this model.

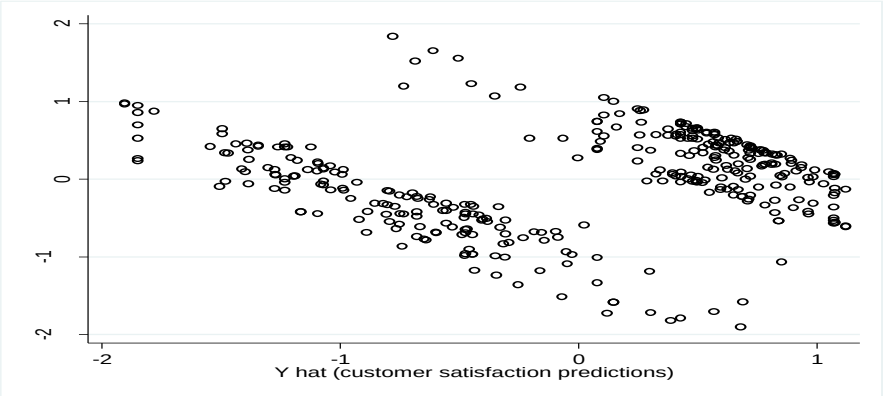

Figure 7: Scatter plot of residuals against predicted values for level-1 residuals; Assurance Customer satisfaction model

To further assess homogeneity of variance in the residuals of this model, the EB level-1 residuals were assessed by plotting and displaying a line-up of residual plots associated with each panel (insurer). There are panels that show random plots with no decreasing or increasing linear patterns of the scatter plots to imply homogeneity at these clusters rather than in the entire sample (Figure 8). There are, however, some panels that show a similar decreasing pattern to imply heterogeneity in the residuals even at the panels.

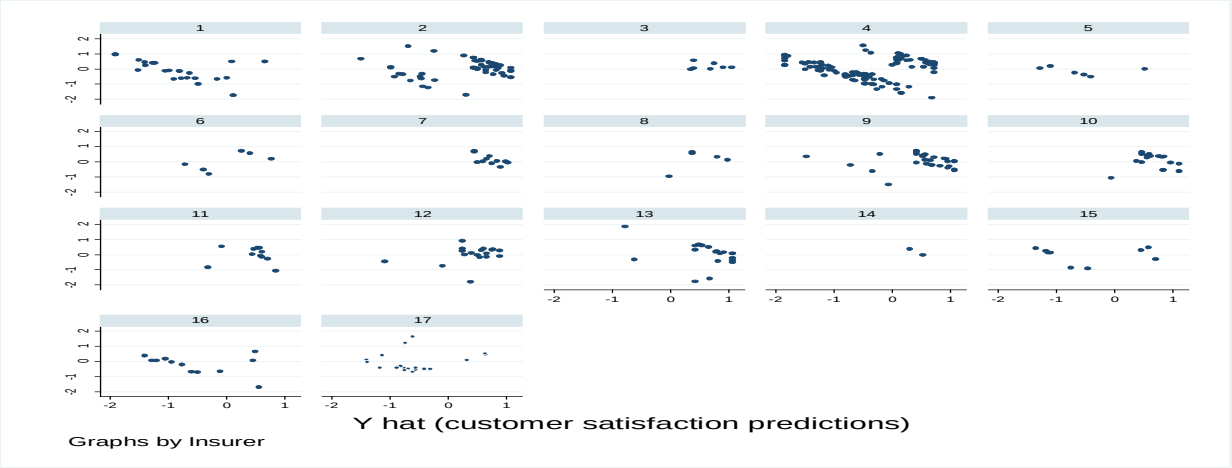

Figure 8: Scatter plot line-up by insurer of residuals against predicted values for level-1 residuals; Assurance Customer satisfaction model

A model of homogeneity of level-2 residuals was assessed for the multiple level-2 residuals in the random effects due to the random covariates and due to the random intercepts. The level 2 residuals which were BLUPs of random intercept predictions when fitted against the predicted values of customer satisfaction also exhibited heteroscedasticity with an increasing pattern of higher predictions (Figure 9). Level-2 residuals from the BLUPs of random covariate (assurance) predictions against the predicted values of customer satisfaction were randomly distributed about zero with no increasing or decreasing patterns to imply homogeneity of variance.

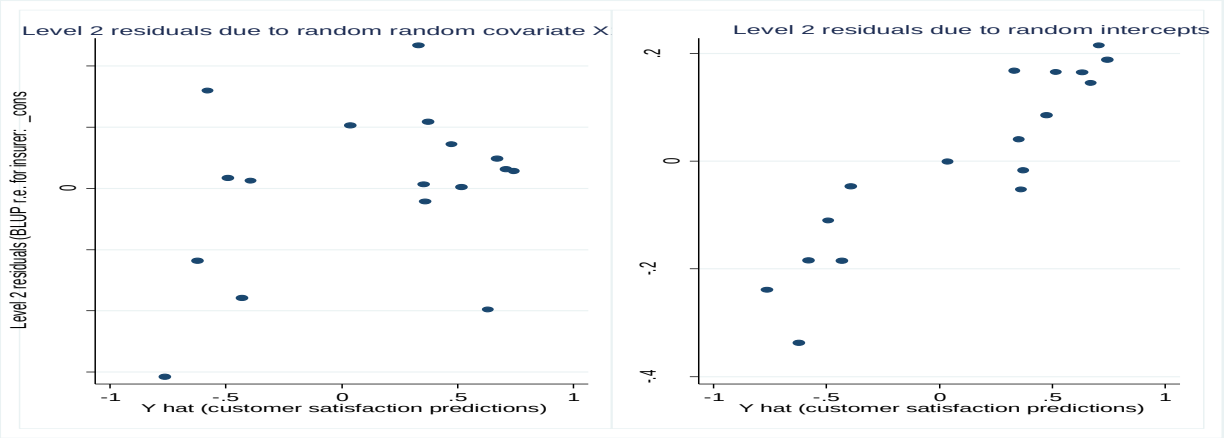

Figure 9: Scatter plot of residuals against predicted values for level-2 residuals; Assurance Customer satisfaction model

The diagnostic exploration results revealed that the assurance customer satisfaction model violated both assumptions of normality and homoscedasticity of the residuals at both levels. The model on the influence of assurance on customer satisfaction therefore adopted generalised linear mixed effect models (GLMM) allowing for robust heteroscedastic standard errors and estimates.

Structural equation model for assurance and customer satisfaction

A structural equation model analysis of the effect of assurance on customer satisfaction was carried out using the retained indicators from the measurement models of each latent construct at each level of analysis. From the Structural equation model, assurance was found to have a significant coefficient estimate at level 1 but had no significant influence as a level 2 random covariate. Table 3 shows the summarised structural equation model for the influence of assurance on customer satisfaction.

Table 3: The effect of assurance on customer satisfaction (SEM)

Level	Row	col	Estimate	Std.Error	CR
Level 1 - client	customer satisfaction within	assurance within	1.811	0.119	15.267
Level 2 - org	customer satisfaction between	assurance between	-0.014	0.126	-0.112

The path diagram in Figure 10 details the structural model on the influence of assurance on customer satisfaction. The figure shows the paths from the manifest (squares) to the latent variables' assurance and customer satisfaction and the effect of assurance on satisfaction by the path from assurance to customer satisfaction only within insurers (client level). At the entity level (between effects) the model shows significant measurement of the latent variable with no structural path effect of assurance on customer satisfaction.

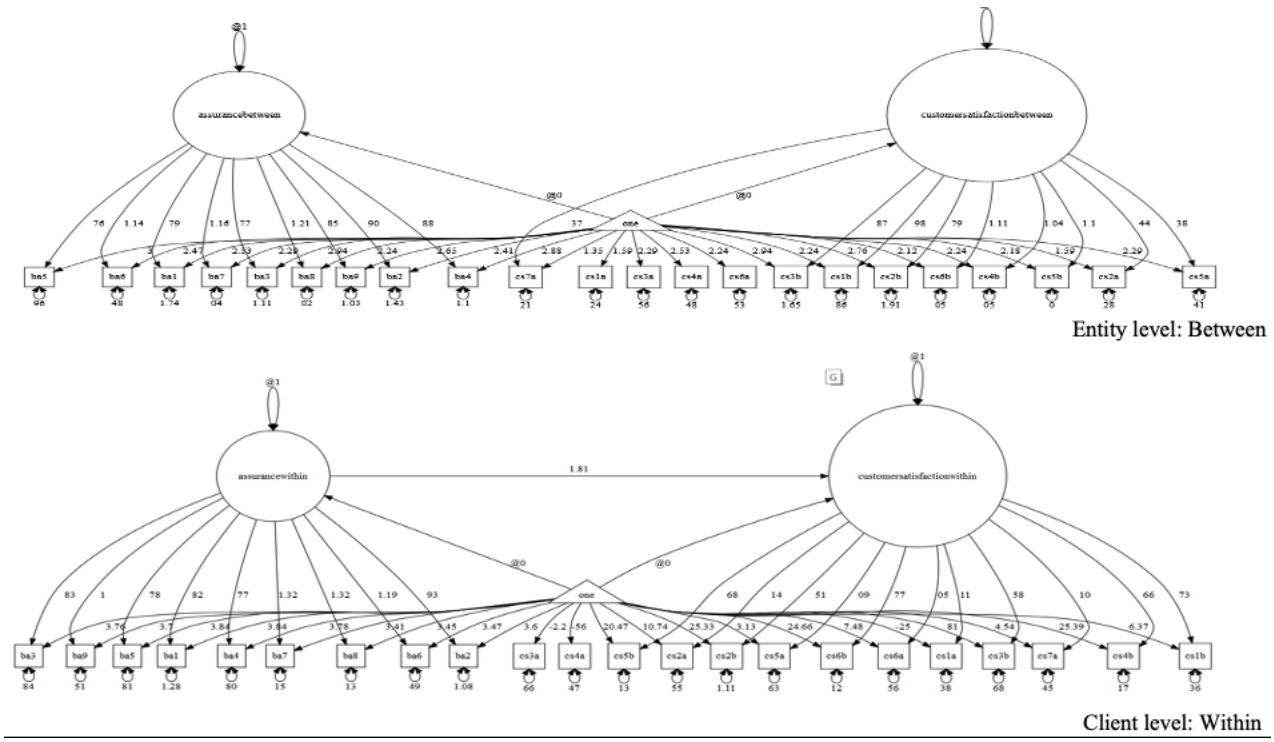

Figure 10: Path diagram showing the influence of Assurance on Customer Satisfaction

From the measurement model of assurance, factor scores were generated and used as latent variables to assess the influence of assurance on customer satisfaction using the generalised linear mixed effect models (GLMM). According to the analysis in Table 4, assurance has a significant coefficient estimate (β =0.696, Z= 19.220, p-value = 0.000) as a level 1 variable in the fixed effect components. The random effect component of that considered the level 2 (entity level) was also found to be significant with random intercepts only without including the random slope (random covariate assurance). The intra-class correlation (ICC) due entities (insurance companies) are 10.1%. The LR statistic is 15.23 with a p-value less than 0.05 implying significant random intercept effects in the model.

$Y_{ij} = \alpha_0 + 0.696X_{1ij} + \varepsilon_{ij}$

$\alpha_0 = 0.042\alpha_{0j} + \mu_j$

Table 4: Influence of Assurance: fixed effect with random intercept

Mixed-effects GLM		Number of obs	=	364	
Group variable: insurer		Number of groups	=	17	
	Obs per group:	Min	=	2	
		Avg	=	21.4	
		Max	=	108	
		Wald chi2(1)	=	.	
Log restricted-likelihood = -344.98146		Prob > chi2	=	.	

Customer satisfaction (fac1_1_y)	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf. Interval]**	
X1	0.696	0.036	19.220	0.000	0.625	0.767
_cons	0.017	0.065	0.270	0.787	-0.109	0.144

	Estimate	**Std. Err.**	**[95% Conf. Interval]**

Table 4 Cont'd

Random-effects Parameters				
Insurer				
var(_cons)	0.042	0.024	0.013	0.128
var(Residual)	0.372	0.028	0.320	0.431

LR test vs. linear regression: chibar2(01) = 15.23 Prob >= chibar2 = 0.000

Level	**ICC**	**Std. Err.**	**[95% Conf.**	**Interval]**
Insurer	0.101	0.053	0.034	0.261

To assess the level 2 influence of assurance on customer satisfaction, assurance was included in the random effect component of the model as a random covariate. The results of the analysis are shown in Table 5. The variance attributed assurance covariate at level-2 is 1.98E-35 implying almost the entire variation between insurance companies is due to the random intercept. The random component is however still significant as shown by the LR statistic which has a p-value less than 0.05 and an intra-class correlation of 10.1%.

Table 5: Effect of Assurance: fixed effect with random slopes

Mixed-effects GLM		Number of obs	= 364
Group variable: insurer		Number of groups	= 17
	Obs per group:	Min	= 2
		Avg	= 21.4
		Max	= 108
		Wald chi2(1)	= .
Log restricted-likelihood = -477.546		Prob > chi2	= .

Customer satisfaction (fac1_1_y)	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf. Interval]**	
Assurance (x1)	0.696	0.036	19.220	0.000	0.625	0.767
_cons	0.018	0.065	0.270	0.787	-0.109	0.144

Random-effects Parameters	**Estimate**	**Std. Err.**	**[95% Conf. Interval]**	
Insurer				
var(_x1)	1.98E-35	1.27E-19	.	.
var(_cons)	0.042	0.024	0.013	0.128
var (Residual)	0.371	0.028	0.320	0.431

LR test vs. linear regression: chibar2(01) = 15.23 Prob >= chibar2 = 0.000

Level	ICC	Std. Err.	[95% Conf.	Interval]
Insurer	0.101	0.053	0.034	0.261

To confirm whether the level-2 variation due to the independent variable assurance was significant, a likelihood ratio test was carried out to assess the change in the random component of the model due to addition of assurance as a level-2 covariate. Table 6 shows the LR test where model M1 is with no random slope is nested in model M2 has the random slope due to assurance. The results show no significant improvement to the model as due to addition of the level-2 assurance covariate.

The addition reflects a 0.00 change in the LR chi-square statistic with a p-value of 1 which is greater than 0.05. Further, the Bayesian information criterion (BIC) of model M1 is less than that of model M2 implying that model M1 is a better model, thus no significant random slope due to assurance. This confirms that assurance has a significant fixed effect on customer satisfaction at level 1 but has no random effect across the entities.

Table 6: LR test on the effect of assurance as level-2 random covariate

Likelihood-ratio test	LR chi2(2)	=	0.000
(Assumption: M1 nested in M2)	Prob > chi2	=	1

Akaike's information criterion and Bayesian information criterion

Model	**Obs**	**ll(null)**	**ll(model)**	**df**	**AIC**	**BIC**
M1 – me no random slopes	364	.	-344.982	4	697.963	713.552
M2 – me random slopes	364	.	-344.982	5	699.963	719.449

The fixed effects of assurance within each entity are parallel lines with equal slopes. The random intercepts are reflected by the shift of the line from one entity to the other depending on the entity effect. The resulting equation from the model with fixed effects of assurance within and random intercepts across the insurance companies is given by the equation below;

$$Y_{ij} = \gamma_{0j} + 0.696X_{ij} + \varepsilon_{ij}$$

$$\gamma_{0j} = 0.042 + \mu_{0j}$$

The bivariate analysis in the multi-level structural equation model and the generalised linear mixed effect model both showed that assurance does not reflect a significant random covariance with customer satisfaction across the insurance companies but affects the satisfaction of each individual customer. The results of this bivariate analysis were used to test hypothesis H_{01} and H_{02}.

H_{01}: Service Assurance does not have a significant influence on customer satisfaction in the insurance industry in Kenya

From the mixed effect model, the p-value of the fixed effect coefficient of assurance was found to be 0.000 which is less than 0.05. The null hypothesis was therefore rejected and a conclusion drawn that Assurance has a significant influence on Customer Satisfaction in the insurance industry in Kenya. The significant fixed effect coefficient estimate was 0.696 implying that increasing the levels of Service Assurance as perceived by a customer by one unit would result into an increase in the level of Customer Satisfaction by 0.696.

H_{02}: Service Assurance does not contribute to the variation in the levels of customer satisfaction across the insurance companies in Kenya.

A likelihood ratio test that was carried out to assess the change in the random component of the model due to addition of Service Assurance as a level-2 covariate showed no significant improvement to the model due to addition of the level-2 assurance covariate. The addition reflected a 0.00 change in the LR chi-square statistic with a p-value of 1 which was greater than 0.05. This implied that there was no significant random covariance between assurance and customer satisfaction across the clusters of customers (insurance companies) thus the variation and levels of customer satisfaction across the insurance companies cannot be explained by the variation in assurance across entities. The null hypothesis was therefore accepted and a conclusion drawn that Service Assurance does not contribute to the variation in the levels of customer satisfaction across the insurance companies in Kenya.

Table 7: Hypothesis Testing

Hypothesis	**Statistic**	**P-value**	**Conclusion**
H_{01} Service Assurance does not have a significant influence on Customer Satisfaction in the insurance industry in Kenya	Fixed effect parameter =0.696	0.036	H_{01} was rejected and a conclusion drawn that Service Assurance has a significant influence on Customer Satisfaction in the insurance industry in Kenya
H_{O2} Service Assurance does not contribute to the variation in levels of Customer Satisfaction across the insurance companies in Kenya	Random effect L.R χ^2= 0.000	1.000	H_{02} was accepted and a conclusion drawn that Service Assurance does not contribute to the variation in levels of Customer Satisfaction across the insurance companies in Kenya

Implications

The measurement model for the study latent construct assurance from the hypothesised observed indicators revealed that all the 9 hypothesised manifest variables significantly explain assurance at both level-1 and level-2. The structural model revealed that the latent variable assurance has a significant fixed effect on customer satisfaction at level 1 (client level). The critical ratio being greater than 1.96 implied a significant fixed effect. The between model, however, showed no significant effect of assurance on customer satisfaction across the insurance companies. The results were echoed by the restricted maximum likelihood estimation (REML) linear mixed effect model fitted using the resulting factor scores of customer satisfaction and assurance. The hypothesis test on the effect of assurance considering the fixed effect model yielded a significant influence on customer satisfaction within the insurance companies at the client's level (β =0.696, Z= 19.220, p-value = 0.000).

The REML estimation showed that the model also had a significant random effect component implying that customer satisfaction retained differences across the insurance companies. A further test on the random component of the REML model, however, revealed that assurance had no significant random slope. This was shown by the likelihood ratio which had no significant improvement due to addition of the random slopes of assurance to the model. The results also showed that the model, without the random slopes of assurance, had lower information criteria no significant model improvement from the effect of assurance on customer satisfaction across the insurance companies.

The following hypothesis were tested:

i. *H_{01}: Service Assurance does not have a significant influence on customer satisfaction in the insurance industry in Kenya.*
ii. *$H_{02:}$ Service Assurance does not contribute to the variation in the levels of customer satisfaction across the insurance companies in Kenya.*

The results of the study indicate that service assurance influences customer satisfaction at level-1 but the variations of customer satisfaction levels across the insurance companies are not as a result of changes in service assurance. This meant that changes in assurance across the insurers do not significantly affect the variation in customer satisfaction across the insurance companies, hence other studies should be conducted to determine the factors that influence customer satisfaction across insurance companies in Kenya. H_{01}: was rejected but $H_{02:}$ was accepted.

The results offer support for the theorized relationship between service assurance and customer satisfaction in the Kenyan insurance industry consistent with a broad view in existing Literature. The study found out that there was a positive significant relationship between service assurance and customer satisfaction. The findings agreed with those of Senthilkumar and Arulraj (2010) who also established that assurance is an important dimension that influenced customer satisfaction in Indian University. There was a statistically significant linear relationship between service assurance and customer satisfaction. This was consistent with studies by Akalu (2015) who found that service assurance had a positive significant relationship with customer satisfaction in selected insurance companies in Addis Ababa. The study established that assurance had a statistically significant relationship with customer satisfaction and these results agreed with the findings by Khurana, (2014) who found that assurance affected customer satisfaction in Indian life insurance industry. More specifically, the results confirmed the findings of Kinyanjui (2013) who found a strong relationship between service assurance and customer satisfaction in Jubilee Insurance in Kenya.

Conclusion

The study concluded that Service Assurance has a significant positive fixed effect on customer satisfaction in the insurance industry in Kenya. Considering the variations across the individual clients, assurance has a significant effect on customer satisfaction. This shows that within insurance companies (cluster/groups of clients), an individual's perception of assurance on his/her insurer affects the customers level of satisfaction with the insurer. The levels of Service Assurance between groups do not, however, affect the general levels of customer satisfaction across insurance companies implying that the variation in customer satisfaction levels across insurance companies is not as a result of service assurance.

The study recommends that insurance firms invest in trying to instil confidence in their customers so that they can feel safe while transacting with the companies because this will determine whether they will have a positive or negative perception regarding the services rendered. The study revealed that there was a variation in the levels of customer satisfaction across the insurance companies but this was not as a result of service assurance. It is therefore recommended that individual insurance companies should seek to determine those factors that cause variations in customer satisfaction in their respective companies. If these recommendations are adopted, the insurance companies will be much closer in achieving maximum customer satisfaction.

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Author Contributions: Conceptualization, Methodology and Data Analysis. (This study fills the literature gap of establishing the influence of service assurance on customer satisfaction across the insurance companies, to determine whether the variations of customer satisfaction from one insurance company to another are as a result of variations in service assurance. Data was analysed on two levels (multi-level data analysis in order to achieve this objective.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.
Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.
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