WISEINSURE PLC

UNDERSTANDING CUSTOMERS

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BUSINESS ANALYTICS

7FNCE040W

MSC FINTECH WITH BUSINESS ANALYTICS, SEM 1, 2023-2024

Word Count = 2513, excluding cover page, table of contents, summary, references, and appendices.

Table of Contents

Summary

The WISINSURE PLC, a leading insurance provider company, has hired a marketing research firm to find out areas of improvement in the business. A research questionnaire was designed and distributed among random sample of 1000 existing policyholders, out of which 285 responded back from different regions. The data was then combined, and multiple statistical tests were conducted.

With the help of descriptive statistics and crosstabulations on demographic variables, it has been identified that most of existing policyholders of WISEINSURE are married, in the middle age group of 25-44, with annual income of £30,000 to £49,999 and have at least secondary school education. The chi square (χ^2) for stated demographic characteristics is significantly associated with customers who have been using the WISEINSURE services for more than 5 years. The ratio of male is also found to be slightly higher than female in the sample data.

A dimension reduction method was used to extract out highly correlated variables and were combined into five perception variable factors: Reliability, Assurance, Appearance, Tangibles, and Accessibility. A linear regression analysis was worked between these five variables as independent variables and rating of overall service quality as a dependent variable. The outcome determined that reliability and assurance are significantly critical perception variables in explaining the variation in overall service rating.

Additionally, a logistic regression analysis was made to analyse would customers recommend WISEINSURE to others when they have had a problem with service in past. The results revealed that if problem was resolved then customers are likely to recommend the service to friends, however, the probability coefficient with a resolved problem is lower than the constant that represents having faced no problem at all.

Based on data analysis, it is recommended that WISEINSURE must design marketing plans to retain its existing loyal customers, by giving them loyalty rewards and recognition, and work on strategies to capture rest of market share. The reliability and assurance factors are perceived most critically important by policyholders, therefore, WISEINSURE should practice quality audits to ensure customers are getting intended service.

1. Introduction

The WISEINSURE insurance service company was founded by a group of Victorian gentlemen in May 1848 in Hatton Garden, London, to operate under the primary business as an Investment, Loan and Assurance Association provider. Soon thereafter, the company renamed itself "The WISEINSURE Mutual Assurance, Investment and Loan Association" and focused on professionals and working people as its target market. The logo "WiseInsure" was featured as a company seal and to represent the business.

1.1. The Success Timeline

In its first 50 years of service, WISEINSURE gained a market reputation and, by 1898, emerged as a leading life assurance company in the UK.

After establishing expertise in the UK, WISEINSURE expanded its operations internationally by opening its first overseas branch in India in 1923. In 1986, the company acquired Jackson National Life Insurance Company in the United States, and in 1994 WISEINSURE Corporation Asia was established. The overseas business continued to flourish until the late 20th century.

Currently headquartered and listed in London, WISEINSURE PLC operates in Asia, US, and Africa as a leading international insurance and asset management group, assisting individuals in mitigating their financial concerns associated with life risks.

1.2. Seeking Growth Potential

The service industry is all about high customer satisfaction. With growing market share, WISEINSURE is also facing growing competition. WISEINSURE's goal is to become insurance experts in combined international business. To sustain its position as a market leader and assess its situation compared to competitors, the senior management of WISEINSURE has conducted a survey on its existing customers from all regions with the help of a marketing research firm.

With the intention to assess customer perceptions of service quality from WISEINSURE and identify areas for improvement, a sample of 1000 policyholders was selected randomly from the customer database, out of which only 285 policyholders responded to the research questionnaire.

1.3. Objective

This memo highlights key demographic and customer characteristic variables from the responses that influence the overall satisfaction of WISEINSURE's customers. A linear model is created to evaluate the impact of independent perception of service variables on the overall satisfaction of customers and their rating of service quality of WISEINSURE. A logistic regression is performed to evaluate if customers would be willing to

recommend WISEINSURE to their friends, especially after facing a service problem. The report concludes with recommendations to the Vice President of Customer Service and the management on factors to consider in the company's marketing plan for next year.

2. Demographic profile

2.1. Gender

After analysing the questionnaire, it is identified that out of 285 respondents, 144 are male (50.5%), and 132 are female (46.3%). However, 9 of the respondents (3.2%) did not reveal their gender (Appendix 1: Table 1).

2.2. Marital Status

Most of policyholders who responded to the questionnaire are married, with a 79.6% proportion in sample size, figure adjusted for missing values (Table 2). From the remaining 20.4% of respondents, the female ratio in single, widowed, and divorced categories is higher compared to male. This means in comparison to males, females are more likely to consider insurance services in cases of absence of a partner (Table 3).

2.3. Age

The frequency statistic shows that about 39.6% of respondents are in the age interval of 25-44 years, followed by the age group between 45-64 years with 22.5% of respondents. The rest of 37.9% of respondents are either under the age of 25 years or over 65 years.

This indicates that people at the age of over 25 years, until before their retirement age of 65, are more persuaded to buy insurance (Table 4).

2.4. Annual Family Income

It is found that about 39.7% of total respondents have an annual family income between a range of £30,000 to £49,999, and 22.1% of respondents have income between £20,000 to £29,000. While the rest of the respondents' income is below £20,000 or more than or equal to £50000. It can also be generalized from this data that most of WISEINSURE's existing customers are in the income group interval between £20,000 and £49,999.

The crosstabulation test determined that the proportion of male respondents in the annual family income group of more than £50,000 is higher than females; however, the chi-square test result is insignificant, meaning we accept the null hypothesis that there is no significant association between gender with annual family income level (Table 6 & 7).

Meanwhile, the chi-square of annual family income with age presents significant results, to not accept the null hypothesis, denoting there is an association between age and family income level. It is identified that most of the respondents in the age group of 25-44 have an annual income range of £30,000 to £49,999 (χ^2 =78.307, p<0.001) (Table 8).

2.5. Education

It is evident from the given data that about 68.9% of survey respondents have either done some university education or lesser schooling. Of which 37.4% of respondents have secondary school or less education, 31.5% have some university education. From remaining data, 18.3% are university undergraduates, and only 12.8% have postgraduate education (Table 9).

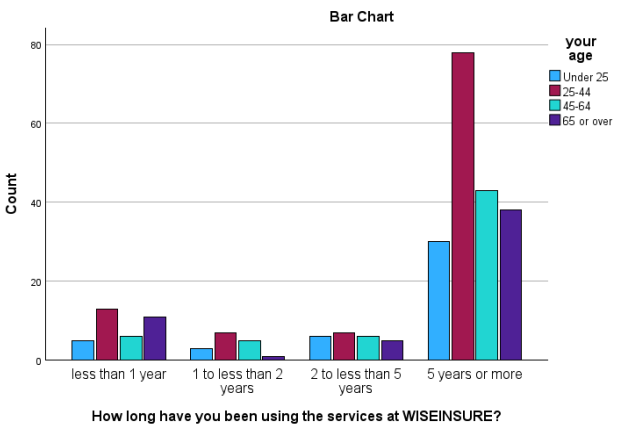
It is observed that the proportion of males is higher than females in secondary education and postgraduation education groups, while females are more proportionate in the group with some education. There is no association between age and level of education, however income levels have significant association with education level (χ^2 = 46.825, p<0.001) (Table 10).

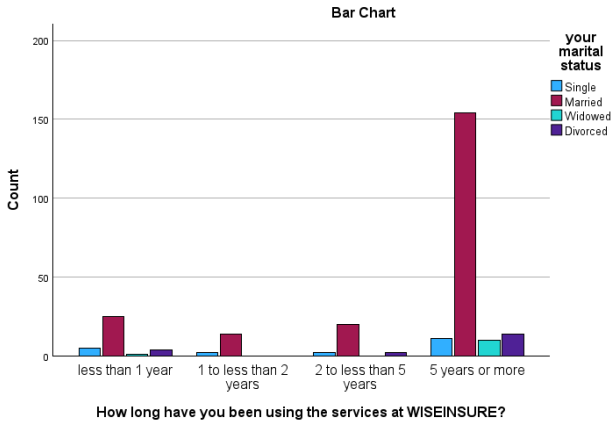
2.6. Demographics and Customer Loyalty

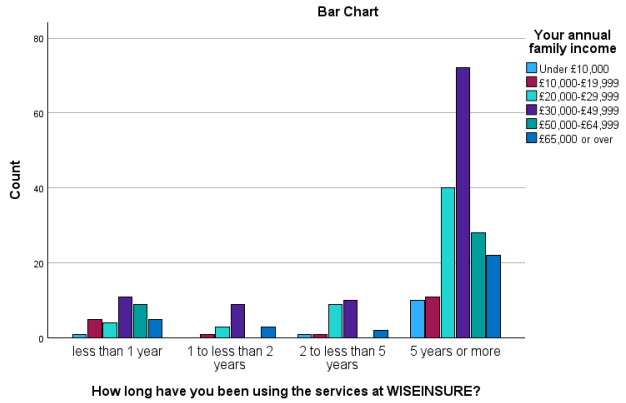
Length of using the services at WISEINSURE

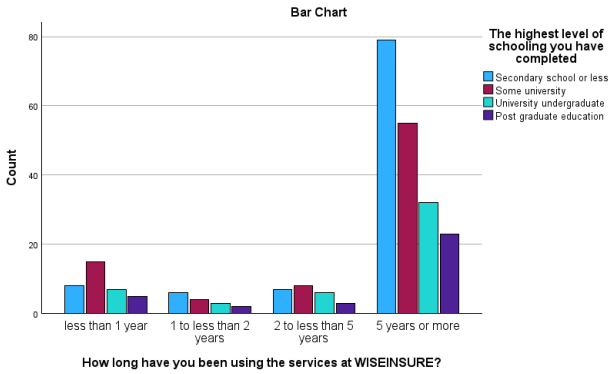
The demographic variables were tested with respect to length of service usage. With multiple cross-tabulation tests, it is noted that most of the respondents who are currently married, in the age group of 25-44, have an annual family income of £30,000 to £49,000, and have pursued some university education or secondary education, have been using the WISEINSURE services for 5 years or more (Refer figures below).

Considering this group as loyal customers, WISEINSURE can design its marketing plan targeted to these demographic characteristics to grab more market share within similar segments. The company can also come up with new strategies to attract other demographic groups.









Willingness to recommend WISEINSURE Services to Friends

The coefficients depicts that only level of schooling is significantly related to willingness to recommend the service to others. For rest of the demographic variables, it is to accept the null hypothesis, means marital status, age and annual family income do not have any impact on willingness to recommend the service to others (Table 11). There is also a significant correlation between level of education with the willingness to recommend the service.

3. Factor Analysis

A factor analysis was performed on the first 22 questions of the questionnaire to group similar customers' responses into factor variables. The KMO and Bartlett's results indicates data set are significantly correlated and have good sampling adequacy for factor analysis (KMO = 0.955, Bartlett's = < .001) (Appendix 2: Table 12).

The initial dimension reduction test presented 2 factors explaining 72.393% cumulative variance in the data. Since too few factors makes it difficult to interpret the total variance accounted by identified factors, therefore a retest was performed to identify 5 fixed key factors in data.

Those 5 identified factors, with eigenvalue > 1, contributes to 83.062% of total explained variance in underlying structure of data (Table 13). The descriptive statistics on the derived factors presented mean values ($\mu = 0$) and standard deviation ($\sigma = 1$) indicating data in the factors is normally distributed. Also, correlation between factors is insignificant ($r = .000$, $p = 1.000 > 0.05$), suggesting no correlation or possibility of multicollinearity among factors.

The factors were subsequently designed as the perception variables as follows (Table 14):

- Perception of Reliability – The service and attention to policyholders
- Perception of Assurance – Delivering promised satisfaction

- Perception of Appearance – The knowledge and presentation of services
- Perception of Tangibles – The Infrastructure of company
- Perception of Accessibility – Convenient operating hours

4. Linear Regression

4.1. Linear regression on Factor scores

A linear regression was executed on computed factor scores, derived from dimension reduction test, to know the most and least critical factors to overall service quality rating. Factor scores can be positive or negative. A higher factor score for an observation on a particular factor suggests a stronger association with that factor, while a lower factor score indicates weaker association with corresponding factor.

With Adjusted R^2 value of 81%, the coefficients of all five factors are found significant ($p < 0.001$), indicating goodness-of-fit of the regression model. It is observed that coefficient value of factor 1 (named 'Reliability') is highest, making it most critical dimension, and coefficient of factor 4 (named 'Tangibles') is lowest being the least critical dimension to overall rating of service quality (Appendix 3: Table 15 & 16).

The similar results were derived with finding median value for perception variables, i.e., median value for perception of reliability is highest and for perception of tangibility is lowest, showcasing most and least critical service dimensions, respectively (Table 17).

4.2. Linear Regression on Perception Variables

A second linear regression was performed on computed perception variables to assess their impact on overall rating to quality of service provided by WISEINSURE.

Hypotheses

Null hypothesis: Ho = There is no impact of perception variables on the overall service quality rating

Alternate Hypothesis: Ha = At least one of the perception variables has significant impact on overall service quality rating.

The Model

$$\hat{Y} = 0.701 + 1.229*\text{Reliability} + 0.370*\text{Assurance} - 0.113*\text{Appearance} - 0.101*\text{Tangibles} - 0.093*\text{Accessibility}$$

(t=1.757, p=.080) (t=11.068, p=<.001) (t=3.983, p=<.001) (t=-1.266, p=.207) (t=-1.509, p=.133) (t=-1.542, p=.125)

$\hat{Y}$: Dependant Variable = On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

Independent Variables = (Constant), Perception of Accessibility, Perception of Tangibles, Perception of Assurance, Perception of Appearance, Perception of Reliability

The adjusted R^2 of this model indicates that 80.3% proportion of the variance in overall service quality rating is explained by the predictor perception variables (Appendix 4: Table 18). The Variance Inflation Factor (VIF) is < 10, indicating there is no multicollinearity between variables, hence, data is not inflated.

Based on the results, we do not accept the null hypothesis, verifying at least one of the perception variables has significant impact on overall service quality rating. It is obvious from the regression analysis that perception of reliability and perception of assurance are the only significant variables in model to impact the rating of service quality.

The model explains that, on average, 1 unit increase in rating of reliability factor will result in overall service quality rating of WISEINSURE by policyholders, ceteris paribus. Similarly, on average 1 positive rating in assurance factor by customers will increase overall service quality rating by 0.370 times, ceteris paribus.

A second linear regression test was conducted by omitting insignificant perception variables from the model. The outcome for adjusted R square remained same, however, std. error of the estimate value increased from 0.996 to 1.031. This indicates that although appearance, tangibility, and accessibility are insignificant variables and the negative coefficient values for these perceptions does not make any sensible interpretation, however, presence of these variables anchors the model in a better way and helps in minimizing the error in prediction of variation in dependent variable. The same justification applies to insignificant presence of the constant value 0.701 in the model.

The perceptions variables were then tested if the values are significantly greater than 4.0 or 5.0. The one-sample t-test at both test values ($\alpha = 4$, $\alpha = 5$) presented significant results, indicating means of perception variables is greater than both alpha test values.

4.3. Importance of Service Factors

The respondents were asked to allocate 0 to 100 points to service variables as per the importance of each variable to them. The responses were evaluated with the help of frequency statistics using means, median, minimum, and maximum values.

In terms of importance of service factors, the respondents have rated assurance the highest as compared to other variables, however, the factor of tangibles remain as least important.

5. Logistic Regression

A logistic regression was arranged to find customers' willingness to recommend WISEINSURE services to others. The covariant considered were two categorical questions, one about any problem with the service and second about was the problem resolved.

Logistic Regression Model

$$\hat{Y} = 3.812*(\text{Problem}) - 1.838*(\text{Resolve}) - 3.587$$

Where:

$\hat{Y}$ = Would you recommend WISEINSURE to a friend interested in Insurance Service (Encoding: 0 = Yes, 1 = No)

Covariant = Constant, have you recently had a problem with the service you received from WISEINSURE, if you did have a problem was it resolved to your satisfaction (Encoding: 1 = Yes, 0 = No)

The overall percentage of probability measured by this model is 89.5% as per the values from Block 1. However, Nagelkerke R Square is at 40.1%, indicating moderate to strong fit of model in predicting the outcome of independent variable. The coefficients of covariant (problem and problem-resolution) are highly significant to the model ($p < 0.001$) (Appendix 5).

A positive coefficient increases the log-odds of the event (the dependent variable being 1), a negative coefficient indicates decrease in the log-odds of event. [Note that the encoding is opposite for dependent variable and predictors]

Hence, model is evaluated as, if the binary value for 'problem' is '1' (Yes), then probability of 'recommendation' as being '1' (No) will increase by 3.812 times. Conversely, the negative coefficient value for 'resolve' indicates when value will be '1' (Yes), then there would be opposite value on other side of equation means '0' (Yes). So, when problem will be resolved, the probability of recommending would increase by 1.838 times. The negative constant value represents if customers do not face any problem at all then probability of recommending WISEINSURE service to others is higher at 3.587 times ($\hat{Y} = 0$ means 'yes').

6. Recommendations

It is concluded from the analysis that WISEINSURE can target its market strategies to certain demographic characteristics which are more common in their existing policyholders. The age group of 25 to 44 years is more probable to get an insurance than other age groups. Similarly, people who are married and have stable family income in range of £30,000 to £49,999 can more easily be convinced to get an insurance. Surprisingly, policyholders with less schooling have appeared to be more attracted towards insurance. WISEINSURE needs

to come up with innovative solutions to grab more market share, such as digitizing its products, offering premium discounts, gift vouchers to loyal customers or introducing new insurance products customized to different demographics such as promoting insurance as an investment product to high income earners and postgraduates.

It is clear from the linear regression model that policyholders are giving more importance to reliability of service ($t = 11.068$, $p < 0.001$), and assurance of getting the promised service ($t = 3.983$, $p < 0.001$). WISEINSURE can introduce a dedicated customer service department to ensure customers' concerns are timely addressed and they get the desired service.

6.1. Underlying Assumptions

- $\alpha = .05$, unless specified otherwise.
- The value labels in data are mentioned as 1 = Strongly Agree to 7 = Strongly Disagree, which did not fall into interpretation. Therefore, interpretation is made believing 1 = Strongly Disagree to 7 = Strongly Agree.
- The missing data was ignored and adjusted percentage values are used for interpretation.

References:

Parasuraman, A., Dhruv Grewal, and R. Krishnan (2007), Marketing Research, 2nd Edition, Houghton Mifflin Company

https://www.WISEINSUREplc.com/about-us/our-history -NOT A REAL COMPANY

SPSS Statistics for Dummies, 3rd Edition by Keith McCormick, Jesus Salcedo, Aaron Poh

7. Appendices

7.1. Appendix 1: Demographics

TABLE 1: gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	144	50.5	52.2	52.2
	female	132	46.3	47.8	100.0
	Total	276	96.8	100.0	
Missing	System	9	3.2		
Total		285	100.0		

TABLE 2: your marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	20	7.0	7.3	7.3
	Married	219	76.8	79.6	86.9
	Widowed	12	4.2	4.4	91.3
	Divorced	24	8.4	8.7	100.0
	Total	275	96.5	100.0	
Missing	System	10	3.5		
Total		285	100.0		

TABLE 3: gender * your marital status Crosstabulation

Count

		your marital status				
		Single	Married	Widowed	Divorced	Total
gender	male	7	125	1	10	143
	female	13	94	11	14	132
Total		20	219	12	24	275

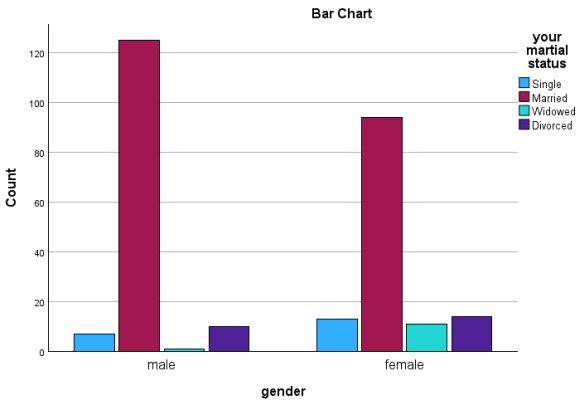
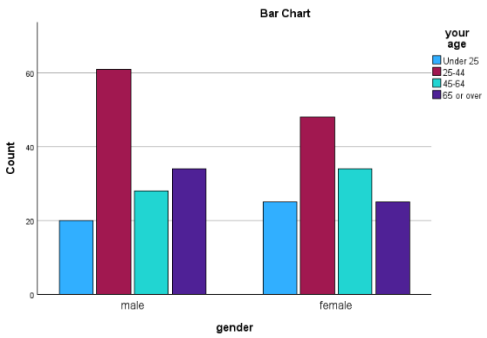


TABLE: 4 your age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	45	15.8	16.4	16.4
	25-44	109	38.2	39.6	56.0
	45-64	62	21.8	22.5	78.5
	65 or over	59	20.7	21.5	100.0
	Total	275	96.5	100.0	



Missing	System	10	3.5		
Total		285	100.0		

TABLE 5: **Your annual family income**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under £10,000	12	4.2	4.5	4.5
	£10,000-£19,999	20	7.0	7.5	12.0
	£20,000-£29,999	59	20.7	22.1	34.1
	£30,000-£49,999	106	37.2	39.7	73.8
	£50,000-£64,999	38	13.3	14.2	88.0
	£65,000 or over	32	11.2	12.0	100.0
	Total	267	93.7	100.0	
Missing	System	18	6.3		
Total		285	100.0		

TABLE: 6 **gender * Your annual family income Crosstabulation**

Count

		Your annual family income						Total
		Under £10,000	£10,000 - £19,999	£20,000-£29,999	£30,000-£49,999	£50,000-£64,999	£65,000 or over	
gender	male	3	11	29	57	23	18	141
	female	9	9	30	49	15	13	125
Total		12	20	59	106	38	31	266

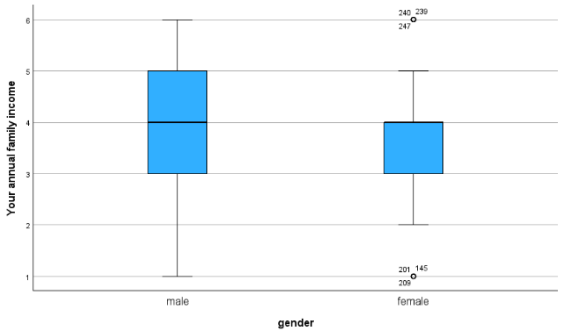
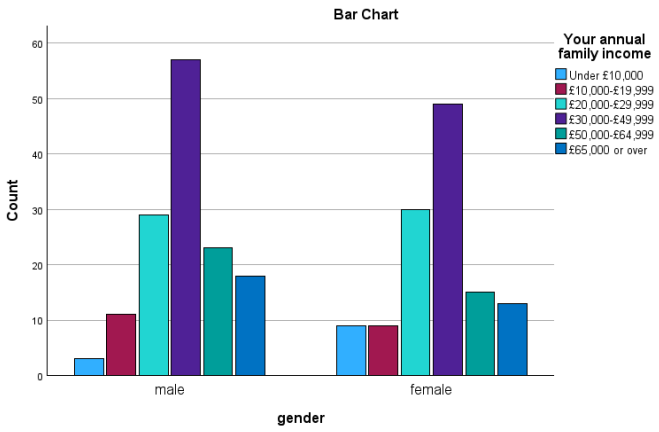


TABLE 7: **Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.368[a]	5	.373
Likelihood Ratio	5.505	5	.357
Linear-by-Linear Association	3.047	1	.081
N of Valid Cases	266		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.64.



Ho: There is no association between gender and income level.

Ha: There is a significant association between gender and income levels

The test is insignificant, so we accept the null hypothesis that there is not association between gender and income level.

TABLE 8: your age * Your annual family income Crosstabulation

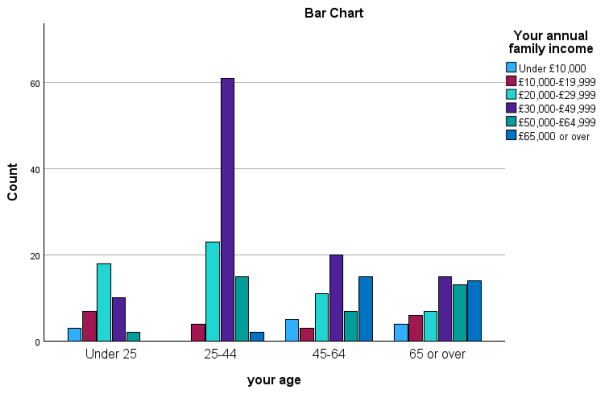
Count

		Your annual family income						
		Under £10,000	£10,000-£19,999	£20,000-£29,999	£30,000-£49,999	£50,000-£64,999	£65,000 or over	Total
your age	Under 25	3	7	18	10	2	0	40
	25-44	0	4	23	61	15	2	105
	45-64	5	3	11	20	7	15	61
	65 or over	4	6	7	15	13	14	59
Total		12	20	59	106	37	31	265

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	78.307[a]	15	<.001
Likelihood Ratio	85.745	15	<.001
Linear-by-Linear Association	17.036	1	<.001
N of Valid Cases	265		

a. 8 cells (33.3%) have expected count less than 5. The minimum expected count is 1.81.



Ho: There is no association between age and annual family income level.

Ha: There is a significant association between age and annual family income levels

The test is significant, so do not accept the null hypothesis, suggesting there is a significant association between age and annual family income of respondents.

TABLE 9: The highest level of schooling you have completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary school or less	102	35.8	37.4	37.4
	Some university	86	30.2	31.5	68.9
	University undergraduate	50	17.5	18.3	87.2
	Post graduate education	35	12.3	12.8	100.0
	Total	273	95.8	100.0	
Missing	System	12	4.2		
Total		285	100.0		

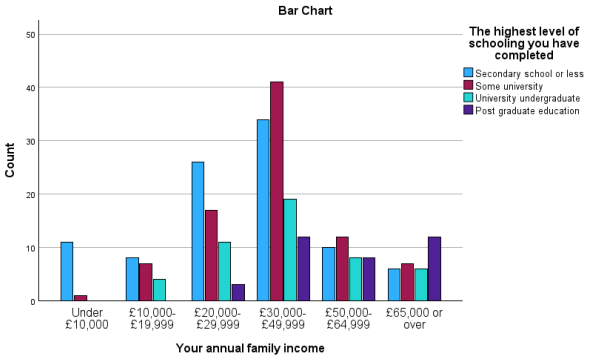


Table 10: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	46.825[a]	15	<.001
Likelihood Ratio	46.909	15	<.001
Linear-by-Linear Association	30.724	1	<.001
N of Valid Cases	263		

a. 7 cells (29.2%) have expected count less than 5. The minimum expected count is 1.60.

Ho = There is no association between annual family income and highest level of education
Ha = There is association between annual family income and highest level of education
Do not accept the null.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.235[a]	.055	.040	.300

a. Predictors: (Constant), The highest level of schooling you have completed, your marital status, Your annual family income, your age

TABLE 11: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.963	.095		10.180	<.001		
	your marital status	-.024	.037	-.051	-.652	.515	.618	1.618
	your age	-.003	.025	-.008	-.103	.918	.581	1.722
	Your annual family income	.024	.018	.098	1.364	.174	.750	1.333
	The highest level of schooling you have completed	.052	.020	.174	2.634	.009	.880	1.136

a. Dependent Variable: Would you recommend WISEINSURE to a friend interested in Insurance Service.

The Adjusted R square is very low, that means the model is weak, indicating that variation in dependent variable may not necessarily determined by the independent variable.

Ho: there is no significant relation between customer's willingness to recommend the service and demographic variables.

Ha: there is significant relation between customer's willingness to recommend the service and at least one of the demographic variables.

Correlations

		Would you recommend WISEINSURE to a friend	gender	your marital status	your age	Your annual family income	The highest level of schooling you have completed
Would you recommend WISEINSURE to a friend	Pearson Correlation	--					
	N	285					
gender	Pearson Correlation	-.068	--				
	Sig. (2-tailed)	.258					
	N	276	276				
your marital status	Pearson Correlation	-.036	.074	--			
	Sig. (2-tailed)	.550	.220				
	N	275	275	275			
your age	Pearson Correlation	-.038	-.042	.546**	--		
	Sig. (2-tailed)	.527	.487	<.001			
	N	275	275	275	275		
Your annual family income	Pearson Correlation	-.135*	-.107	-.125*	.254**	--	

	Sig. (2-tailed)	.027	.081	.041	<.001		
	N	267	266	265	265	267	
The highest level of schooling you have completed	Pearson Correlation	-.175**	-.118	-.025	.109	.342**	--
	Sig. (2-tailed)	.004	.052	.680	.072	<.001	
	N	273	273	272	272	263	273

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

7.2. Appendix 2: Factor Analysis

TABLE 12: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.955
Bartlett's Test of Sphericity	Approx. Chi-Square	5198.119
	df	231
	Sig.	<.001

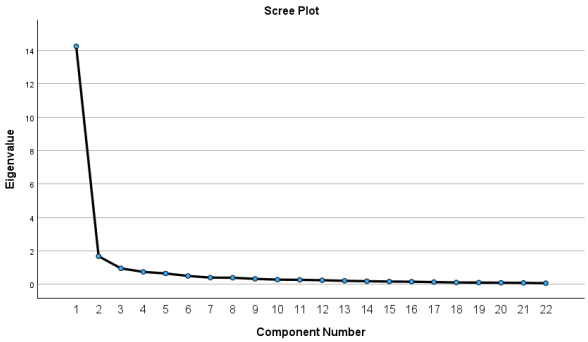


TABLE 13: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.246	64.752	64.752	14.246	64.752	64.752	8.115	36.887	36.887
2	1.681	7.640	72.393	1.681	7.640	72.393	3.763	17.107	53.994
3	.954	4.337	76.730	.954	4.337	76.730	2.524	11.473	65.467
4	.744	3.380	80.111	.744	3.380	80.111	2.316	10.527	75.994
5	.649	2.952	83.062	.649	2.952	83.062	1.555	7.068	**83.062**
6	.501	2.278	85.340						
7	.401	1.824	87.165						
8	.393	1.787	88.951						
9	.326	1.480	90.432						
10	.280	1.274	91.706						
11	.267	1.214	92.920						
12	.243	1.105	94.025						
13	.210	.954	94.978						
14	.186	.845	95.823						
15	.168	.763	96.586						
16	.156	.708	97.294						

17	.133	.605	97.899						
18	.110	.498	98.397						
19	.103	.469	98.866						
20	.095	.430	99.296						
21	.087	.397	99.692						
22	.068	.308	100.000						

Extraction Method: Principal Component Analysis.

Descriptive Statistics

	Mean	Std. Deviation	N
REGR factor score 1 for analysis 2	.0000000	1.00000000	208
REGR factor score 2 for analysis 2	.0000000	1.00000000	208
REGR factor score 3 for analysis 2	.0000000	1.00000000	208
REGR factor score 4 for analysis 2	.0000000	1.00000000	208
REGR factor score 5 for analysis 2	.0000000	1.00000000	208

Correlations

		REGR factor score 1 for analysis 2	REGR factor score 2 for analysis 2	REGR factor score 3 for analysis 2	REGR factor score 4 for analysis 2	REGR factor score 5 for analysis 2
REGR factor score 1 for analysis 2	Pearson Correlation	--				
	N	208				
REGR factor score 2 for analysis 2	Pearson Correlation	.000	--			
	Sig. (2-tailed)	1.000				
	N	208	208			
REGR factor score 3 for analysis 2	Pearson Correlation	.000	.000	--		
	Sig. (2-tailed)	1.000	1.000			
	N	208	208	208		
REGR factor score 4 for analysis 2	Pearson Correlation	.000	.000	.000	--	
	Sig. (2-tailed)	1.000	1.000	1.000		

	N	208	208	208	208	
REGR factor score 5 for analysis 2	Pearson Correlation	.000	.000	.000	.000	--
	Sig. (2-tailed)	1.000	1.000	1.000	1.000	
	N	208	208	208	208	208

TABLE 14: **Rotated Component Matrix[a]**

	Component				
	1	2	3	4	5
Employees of WISEINSURE are always willing to help you.	.850	.294	.243	.126	.096
Employees of WISEINSURE are never too busy to respond to your requests	.849	.245	.224	.156	.127
The behavior of employees of WISEINSURE instills confidence in you.	.795	.355	.240	.110	.171
You feel safe in your transactions with WISEINSURE.	.791	.405	.185	.122	.093
When you have a problem, WISEINSURE shows a sincere interest in solving it.	.740	.450	.168	.170	.123
Employees of WISEINSURE give you prompt service.	.739	.385	.268	.176	.173
Employees of WISEINSURE understand your specific needs.	.711	.275	.189	.220	.330
WISEINSURE has your best interests in mind.	.711	.368	.138	.286	.231
WISEINSURE has employees who give you personal attention.	.694	.152	.290	.161	.424
WISEINSURE treats you with care.	.688	.335	.266	.138	.288
Employees of WISEINSURE are consistently courteous with you.	.628	.262	.565	.037	.112
Employees of WISEINSURE tell you exactly when services will be performed.	.599	.521	.375	.198	.147
Employees of WISEINSURE have the knowledge to answer your questions.	.599	.388	.379	.049	.258
WISEINSURE performs the service right the first time.	.394	.788	.220	.116	.140
WISEINSURE provides its services at the time it promises to do so.	.548	.699	.173	.180	.087
When WISEINSURE promises to do something, it does so.	.576	.684	.015	.200	.016
WISEINSURE maintains error-free records	.375	.655	.325	.110	.317
WISEINSURE employees are neat-appearing.	.358	.119	.761	.239	.139
Materials associated with service (such as pamphlets or statements)	.181	.235	.733	.365	.146
WISEINSURE has modern-looking equipment.	.169	.120	.201	.910	.114
WISEINSURE physical facilities are visually appealing.	.169	.143	.189	.908	.089
WISEINSURE has operating hours convenient to all its policyholders.	.312	.170	.183	.171	.855

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Factors Extracted:

Factor 1: Reliability = (p2 + p6 + p8 + p9 + p10 + p15 + p16 + p17 + p18 + p19 + p20 + p21 + p22) / 13

Factor 2: Assurance = (p1 + p3 + p4 + p5) / 4

Factor 3: Appearance = (p13 + 14) / 2

Factor 4: Tangibles = (p11 + p12) / 2

Factor 5: Accessibility = (p7)

7.3. Appendix 3: Linear regression on Factor Scores

TABLE 15: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.903[a]	.815	.810	.978

a. Predictors: (Constant), REGR factor score 5 for analysis 2, REGR factor score 4 for analysis 2, REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2

b. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	842.388	5	168.478	176.138	<.001[b]
	Residual	191.301	200	.957		
	Total	1033.689	205			

a. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

b. Predictors: (Constant), REGR factor score 5 for analysis 2, REGR factor score 4 for analysis 2, REGR factor score 2 for analysis 2, REGR factor score 3 for analysis 2, REGR factor score 1 for analysis 2

TABLE 16: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	7.962	.068		116.849	<.001		
	REGR factor score 1 for analysis 2	1.601	.068	.713	23.452	<.001	1.000	1.000
	REGR factor score 2 for analysis 2	1.105	.068	.493	16.216	<.001	1.000	1.000

REGR factor score 3 for analysis 2	.400	.068	.179	5.885	<.001	1.000	1.000
REGR factor score 4 for analysis 2	.237	.068	.106	3.483	<.001	1.000	1.000
REGR factor score 5 for analysis 2	.282	.068	.126	4.136	<.001	1.000	1.000

a. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

TABLE 17: Statistics

		Perception of Reliability	Perception of Assurance	Perception of Appearance	Perception of Tangibles	Perception of Accessibility
N	Valid	243	264	253	232	274
	Missing	42	21	32	53	11
Mean		5.64	5.38	5.88	5.34	5.42
Median		6.08	5.75	6.00	5.50	6.00
Mode		7	7	7	5	7
Skewness		-1.239	-1.162	-1.389	-.854	-.995
Std. Error of Skewness		.156	.150	.153	.160	.147
Range		6	6	6	6	6
Minimum		1	1	1	1	1
Maximum		7	7	7	7	7

7.4. Appendix 4: Linear Regression Model on Perception variables

TABLE 18: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899[a]	.808	.803	.996

a. Predictors: (Constant), Perception of Accessibility, Perception of Tangibles, Perception of Assurance, Perception of Appearance, Perception of Reliability

b. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	835.430	5	167.086	168.553	<.001[b]
	Residual	198.259	200	.991		
	Total	1033.689	205			

a. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

b. Predictors: (Constant), Perception of Accessbility, Perception of Tangibles, Perception of Assurance, Perception of Appearance, Perception of Reliability

Coefficientsa

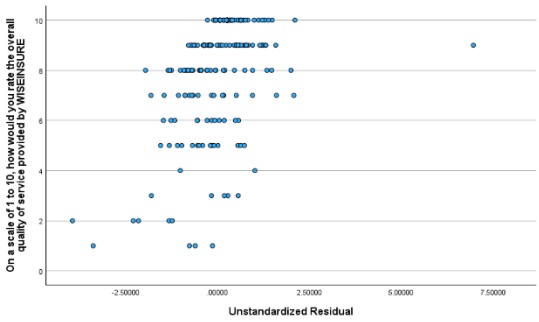
Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.701	.399		1.757	.080		
	Perception of Reliability	1.229	.111	.775	11.068	<.001	.196	5.107
	Perception of Assurance	.370	.093	.243	3.983	<.001	.258	3.879
	Perception of Appearance	-.113	.089	-.057	-1.266	.207	.475	2.107
	Perception of Tangibles	-.101	.067	-.057	-1.509	.133	.669	1.494
	Perception of Accessibility	-.093	.061	-.060	-1.542	.125	.629	1.589

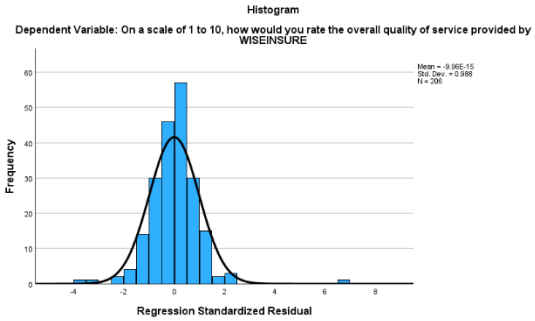
a. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.14	10.27	7.96	2.019	206
Residual	-3.949	6.964	.000	.983	206
Std. Predicted Value	-3.380	1.145	.000	1.000	206
Std. Residual	-3.966	6.994	.000	.988	206

a. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE





Linear Regression with omitted variables:

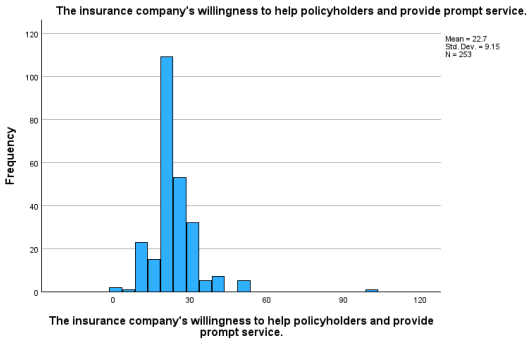
Model Summary[b]

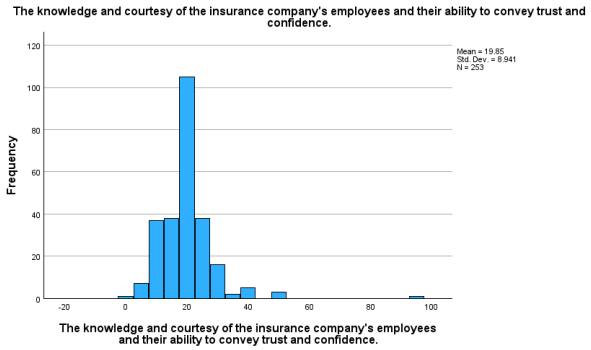
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.898[a]	.806	.804	1.031

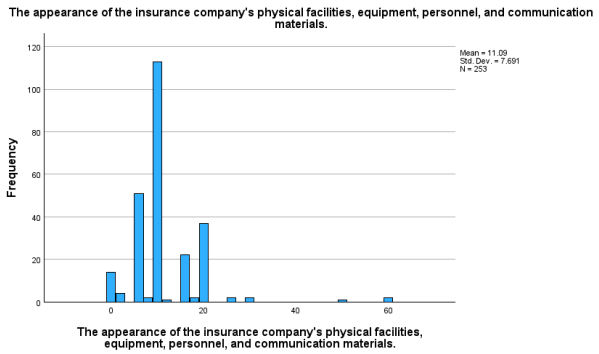
a. Predictors: (Constant), Perception of Assurance, Perception of Reliability

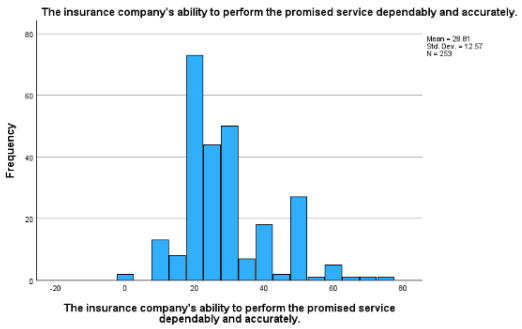
b. Dependent Variable: On a scale of 1 to 10, how would you rate the overall quality of service provided by WISEINSURE

Importance of Perception Variables:

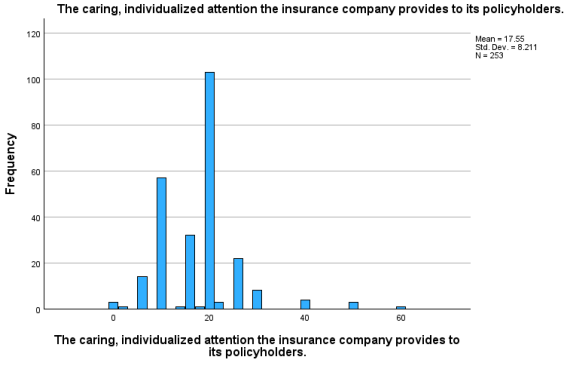








Importance of Service	Avg. Points
The appearance of the insurance company's physical facilities, equipment, personnel, and communication materials. **Tangibility**	11.09
The insurance company's ability to perform the promised service dependably and accurately. **Assurance**	28.81
The insurance company's willingness to help policyholders and provide prompt service. **Accessibility**	22.70
The knowledge and courtesy of the insurance company's employees and their ability to convey trust and confidence. **Appearance**	19.85
The caring, individualized attention the insurance company provides to its policyholders. **Reliability**	17.55
Total	**100**



Statistics

		The appearance of the insurance company's physical facilities, equipment, personnel, and communication materials.	The insurance company's ability to perform the promised service dependably and accurately.	The insurance company's willingness to help policyholders and provide prompt service.	The knowledge and courtesy of the insurance company's employees and their ability to convey trust and confidence.	The caring, individualized attention the insurance company provides to its policyholders.
N	Valid	253	253	253	253	253
	Missing	32	32	32	32	32
Mean		11.09	28.81	22.70	19.85	17.55
Median		10.00	25.00	20.00	20.00	20.00
Range		60	75	99	96	60
Minimum		0	0	1	0	0
Maximum		60	75	100	96	60

7.5. Appendix 5: Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	267	93.7
	Missing Cases	18	6.3
	Total	285	100.0
Unselected Cases		0	.0
Total		285	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding (1)
Problem resolved	No	221	.000
	Yes	46	1.000
A problem with the service	No	189	.000
	Yes	78	1.000

Block 0: Beginning Block

Classification Table[a,b]

	Observed		Predicted: Would you recommend WISEINSURE to a friend interested in Insurance Service. yes	No	Percentage Correct
Step 0	Would you recommend WISEINSURE to a friend interested in Insurance Service.	yes	235	0	100.0
		No	32	0	.0
	Overall Percentage				88.0

a. Constant is included in the model.

b. The cut value is .500

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	62.462	2	<.001
	Block	62.462	2	<.001
	Model	62.462	2	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	133.317[a]	.209	.401

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted: Would you recommend WISEINSURE to a friend interested in Insurance Service. yes	No	Percentage Correct
Step 1	Would you recommend WISEINSURE to a friend interested in Insurance Service.	yes	219	16	93.2
		No	12	20	62.5
	Overall Percentage				89.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	A problem with the service(1)	3.812	.563	45.843	1	<.001	45.252
	Problem resolved(1)	-1.838	.532	11.936	1	<.001	.159
	Constant	-3.587	.453	62.609	1	<.001	.028

a. Variable(s) entered on step 1: A problem with the service, Problem resolved.