

CHAPTER V

DATA ANALYSIS AND RESULTS

5.1 INTRODUCTION

This chapter presents the results of the data analysis and hypothesis testing. Two major statistical programs were employed to analyze the collected data in this study. SPSS18.0 was used for descriptive statistics, reliability testing, and normality test, and AMOS21.0 was used for the confirmatory factor analysis and full model analysis. The first section of this chapter describes the demographic profiles of the survey respondents. The second section provides a description of the customer awareness of products and services provided by Islamic window banks. The third section provides a descriptive analysis of the service quality (Perceived- Expected) dimensions. The fourth section presents the results of the normality test for this questionnaire. The fifth section presents the results of the confirmatory factor analysis conducted to confirm the factor structure of the constructs. The sixth section explores the structural equation modelling (SEM). The seventh section examines the results of the hypothesis tests by SEM and a paired sample *t*-test. The eighth section examines the gap analysis between expected and perceived service quality. The ninth section presents the results of the hypothesis testing that were performed via the SEM and a paired sample *t*-test, including the testing of direct relationships, moderating effect, and indirect relationships. The last section presents the discussion of research objectives and research questions.

5.2 DESCRIPTIVE ANALYSIS OF THE SAMPLE

Six hundred questionnaires were distributed to customers and potential customers of commercial banks that work under Islamic windows in Libya. However, only 366 responses were appropriate for statistical analysis. Using seven demographic variables (gender, age, level of qualifications, occupation, monthly income, marital status, and name of the bank) for the respondents in the sample, we describe the study sample using the results summarized in Tables 4.1 to 4.7.

Table 5.1: Descriptive Statistics for Gender

Gender	Frequency	Percentage
Male	224	61.2%
Female	142	38.8%

As Table 5.1 shows, the total number of male respondents in the sample was 224 (61.2%) and the total number of female respondents was 142 (38.8%). A clear discrepancy exists between male and female respondents. The reason behind that is the social culture that is evolving, especially in small cities, where the women could not go to the bank to withdraw the money or any other bank transactions. In capital cities, however, the women can go to the banks, but this is still not common.

Table 5.2: Descriptive Statistics for Age

Age group	Frequency	Percentage
Below 25 years	61	16.7%
26 to 40 years	164	44.8%
41 to 55 years	95	26%
Above 56 years	46	12.6%

As Table 5.2 shows, 164 respondents between 26 and 40 years old made up the largest age group (44.8%). According to the General Authority Information (2008), this relatively youthful distribution is fairly representative of the Libyan population, followed by these age groups and their corresponding percentages: 95 respondents between 41 and 55 years old (26%); 61 respondents below 25 years old (16.7%); and 46 respondents above 56 years old (12.6%).

Table 5.3: Descriptive Statistics for the Level of Qualifications

Level of Qualification group	Frequency	Percentage
No academic qualification	41	11.2%
Secondary school	84	23%
High Diploma or Bachelor	167	45.6%
Master	60	16.4%
PhD	14	3.8%

As Table 5.3 shows, 167 respondents (45.6%) had a High Diploma or Bachelor's degree; in other words, the majority of the respondents had a High Diploma or Bachelor's degree and this is in accordance with the efforts by the government to raise the level of education. Meanwhile, 84 (23%) had secondary schooling; 60 (16.4%) had a Master's degree; 41 (11.2%) had no academic qualification; and 14 (3.8%) had a Ph.D. degree.

Table 5.4: Descriptive Statistics for Occupation

Occupation	Frequency	Percentage
Government employees	221	60.4%
Private sector employees	85	23.2%
Working independently	49	13.4%
Student	4	1.1%
Not working	7	1.9%

However, the distribution of occupations summarized in Table 5.4 shows that the majority of the respondents (221, or 60.4%) were government employees, the reason behind most of the respondents are working as government employees is that they do not see that the private sector is a stable sector. On the other hand, for the private sector owners, besides their own jobs they prefer to work within the government sector, followed by 85 respondents (23.2%) who were private sector employees, 49 respondents (13.4%) who worked independently, 7 respondents (1.9%) who did not work, and 4 respondents (1.1%) who were students.

Table 5.5: Descriptive Statistics for Monthly Income

Monthly Income	Frequency	Percentage
Less than 350 L.D	5	1.4%
351 to 500 L.D	29	7.9%
501 to 800 L.D	99	27%
Above 801 L.D	233	63.7%

Note: 1\$ = 1.3 L.D

Data on monthly income summarized in Table 5.5 indicate that 233 respondents (63.7%) had a monthly income higher than 801 Libyan dinars, because most of respondents had high Diploma and Bachelor degrees, with their income more than 800 Libyan dinar; followed by 99 respondents (27%) who had an income of 501 to 800 Libyan dinars, 29 respondents (7.9%) who had an income of 351 to 500 Libyan dinars, and 5 respondents (1.4%) who earned less than 350 Libyan dinars per month.

Table 5.6: Descriptive Statistics for Marital Status

Marital status	Frequency	Percentage
Single	125	34.2%
Married	215	58.7%
Widowed / divorced	26	7.1%

The distribution of marital status summarized in Table 5.6 indicates that 215 respondents (58.7%) were married, because most of the respondents their age were above 26 years old; whereas 125 respondents (34.2%) were single and 26 (7.1%) were widowers or divorcees.

The distributions of respondents across banks are similar to one another: Gumhouria Bank had 137 respondents (37.4%), Wadda Bank had 119 respondents (32.5%), and Sahara Bank had 110 respondents (30.1%).

5.3 CUSTOMER AWARENESS OF ISLAMIC PRODUCTS AND SERVICES

Customer awareness of products and services is shown in Table 5.7. This part examines the extent to which the customers were aware of the products and services

offered by the Islamic windows in banks, as well as the extent to which these products and services were actually used by customers. To achieve these goals, the degree of the respondents' awareness of the different products offered by the Islamic windows and the degree of utilization of the products were evaluated.

Table 5.7: Descriptive Statistics for Customer Awareness of Islamic Banking Products and Services

Items	Not aware	Aware but not used	Aware and use it	Mean	St. Dev
	N (%)				
Services without interest	77(21)	45(12.3)	244(66.7)	2.46	0.819
Islamic windows	136(37.2)	77(21)	153(41.8)	2.05	0.889
Mudharabah	205(56)	161(44)	-	1.44	0.497
Musharakah	202(55.2)	164(44.8)	-	1.45	0.498
Murabahah	129(35.2)	82(22.4)	155(42.3)	2.07	0.879
Ijarah financing	294(80.3)	72(19.7)	-	1.2	0.398

Table 5.7 indicates that the customers had the highest awareness, which included 79% of the respondents, of Islamic banking services without interest. The majority of consumers (66.7%) were actually using Islamic banking services without interest. The four major products of Islamic banks consist of Islamic windows, Mudharabah, Musharakah, Murabahah, and Ijarah financing. Based on Table 5.7, Murabahah appears to be the product that has the highest awareness level among customers, with 64.7% of customers being aware of this product and 42.3% were actually using it.

Meanwhile, both Mudharabah and Musharakah were the second major products that customers were aware of, with 44% for Mudharabah and 44.8% for Musharakah. On the other hand, there were 56% of respondents who were not aware of the concept of Mudharabah, also 55.2% were not aware of the concept of Musharakah, and relatively speaking, neither of them were actually being used. Finally, Ijarah financing seemed to be the product that the customers were least aware of, supported by the finding that 80.3% of respondents did not know about this product. There are many reasons behind this, whereby the customers are not aware about services and products offered by windows Islamic banks. To start with, these services and products are new in Libyan banking sector, where they have just started a few years ago, in 2009. The researcher had collected his data in 2012. Secondly, there was no specialized officer at the branch to educate customers and to help them to further understand Islamic services and products.

5.4 DESCRIPTIVE ANALYSIS OF CUSTOMER SATISFACTION

The degrees of customer satisfaction about services and products are shown in Table 5.8. This section examines the extent to which respondents were satisfied with products and services offered by the Islamic windows in commercial banks. The degree of satisfaction of the respondents was assessed in relation to the different products and services offered by the Islamic windows in the banks.

Table 5.8 indicates that the customers had highest satisfaction, and the mean was 3.52 of the total respondents regarding the “overall satisfaction level with regard to your bank”. This finding was followed by “recommending your friends to deal with this

bank”, which had a mean of 3.21. “How satisfied are you with the services provided by the bank” and “Are you satisfied with your financial transactions with the bank” had mean of 3.04 and 3.02, respectively.

Table 5.8: Descriptive Analysis of Customer Satisfaction

Items	Strong dissatisfied	Dissatisfied	Neutral	Satisfy	Strong satisfy	Mean	St. Dev
	N (%)						
Satisfied with the service	10(2.7)	138(37.7)	46(12.6)	172(47)	-	3.04	0.978
Satisfied with financial transactions	11(3)	144(39.3)	36(9.8)	175(47.8)	-	3.02	0.997
Overall satisfaction	1(0.3)	44(12)	130(35.5)	147(40.2)	44(12)	3.52	0.865
Services meet my expectations	14(3.8)	151(41.3)	87(23.8)	114(31.1)	-	2.82	0.921
Recommend to your friends	3(0.8)	74(20.2)	146(39.9)	130(35.5)	13(3.6)	3.21	0.831

Finally, the least satisfactory was “the service meets my expectation item,” with a mean of 2.82. The average customer satisfaction was reflected by the respondents being slightly satisfied with the services and products provided by the banks.

5.5 DESCRIPTIVE ANALYSIS OF EXPECTED SERVICE QUALITY

The levels of the expected service quality of the services and products are shown in Tables 5.9 to 5.13. This section examines the opinions of customers with regard to their expectations of the service and products offered by excellent banks. Twenty-two

items were used to measure expected service quality; five pertained to the sub-dimensions. As presented in the following tables, 4 items measured Tangibility, 5 items measured Reliability, 4 items measured Responsiveness, 5 items measured Assurance, and 5 items measured Empathy.

5.5.1 Descriptive Analysis of Tangibility

Tangibility is represented by the various types of material facilities that should be offered by excellent banks, including equipment, appearance of personnel, logos, and the means of contact used by the organization, as shown in Table 5.9.

Table 5.9: Descriptive Analysis of Tangibility

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
Equipment and tools	-	1(0.3)	1(0.3)	194(53)	170(46.4)	4.46	0.52
Physical facilities visually appealing	-	-	-	143(58.2)	153(41.8)	4.42	0.494
Employees' neat appearance	-	-	-	198(54.1)	168(45.9)	4.46	0.499
General appearance compatible with service	-	3(0.8)	14(3.8)	197(53.8)	152(41.5)	4.36	0.598

Table 5.9 indicates that the majority of respondents agreed and strongly agreed with the equipment, appearance of personnel, logos, and the means of contact used by the organization. Thus, the expectations of the respondents were high. As shown in Table

5.9 the respondents or 99.4% strongly agreed and agreed that proper equipment and tools should be offered by excellent banks. Meanwhile, physical facilities, employees' neat appearance and general appearance were factors chosen by the respondents to be offered by excellent banks or in respective percentage of 100%, 100% and 95.3%.

5.5.2 Descriptive Analysis of Reliability

Reliability is represented by the ability to fulfil the promises of efficiency in providing the same level of quality of service and the ability to be dependable and to accurately perform the service. These services should be offered by excellent banks, as shown in Table 5.10.

Table 5.10: Descriptive Analysis of Reliability

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
They will do as promised	2(0.5)	2(0.5)	14(3.8)	174(47.5)	174(47.5)	4.41	0.646
Show a sincere interest in solving problems	2(0.5)	5(1.4)	17(4.6)	175(47.8)	167(45.6)	4.37	0.688
Right service from the first time	1(0.3)	4(1.1)	5(1.4)	186(50.8)	170(46.4)	4.42	0.609
Provide the service at the time	1(0.3)	5(1.4)	6(1.6)	155(42.3)	199(54.4)	4.49	0.631
Maintain error free records			4(1.1)	153(41.8)	209(57.1)	4.56	0.519

Table 5.10 indicates that the majority of respondents agreed and strongly agreed with the ability to fulfil the promises of efficiency in providing the same level of quality of

service and the ability to perform the service dependably and accurately. These services should be offered by excellent banks, and most of the respondents had high expectations. In terms of keeping promises, 95% strongly agreed and agreed that this is a factor that should be offered by excellent banks, and at the same time they strongly agreed and agreed about other services such as showing a sincere interest in solving problems, while factors ‘Right service to from the first time’, ‘Provided the service at the time’ and ‘Keep error free records’ record 93.4%, 97.2%, 96.7% and 98.9% respectively.

5.5.3 Descriptive Analysis of Responsiveness

Responsiveness is the desire or willingness of the service provider to help customers deliver the services to them. This attribute includes promptness, convenience, accessibility, and effective communication. Services in relation to responsiveness should be offered by excellent banks, as shown in Table 5.11.

Table 5.11: Descriptive Analysis of Responsiveness

Items	strongly disagree	Disagree	Neutral	Agree	strongly agree	Mean	St. Dev
	N(%)						
When service will be performed	1(0.3)	2(0.5)	46(10.9)	163(44.5)	160(43.7)	4.31	0.706
Provide prompt services		5(1.4)	22(6)	166(45.4)	173(47.3)	4.39	0.663
Always be willing to help		8(2.2)	59(16.1)	176(48.1)	123(33.6)	4.13	0.754
Never be too busy to respond	8(2.2)	8(2.2)	17(4.6)	192(52.5)	141(38.5)	4.23	0.815

Table 5.11 indicates that the majority of respondents agreed and strongly agreed with the desire or willingness of the service provider to help customers and deliver the services to them; responsiveness includes promptness, convenience, accessibility, and effective communication. Services related to this dimension should be offered by excellent banks. The expectations of most respondents were high.

5.5.4 Descriptive Analysis of Assurance

Assurance comprises competence, courtesy, credibility, and security of the general behavior of the employees of the service organization. It also includes the ability of employees to offer assurance and confidentiality to customers through their competence, privacy, courteousness, credibility, and effective communication, all of which should be offered by excellent banks, as shown in Table 5.12.

Table 5.12: Descriptive Analysis of Assurance

Items	strongly disagree	Disagree	Neutral	Agree	strongly agree	Mean	St. Dev
	N (%)						
Instil confidence in customers	1(0.3)	9(2.5)	167(18.3)	191(52.2)	98(26.8)	4.03	0.758
Feel safe in transactions	1(0.3)	6(1.6)	79(21.6)	148(40.4)	132(36.1)	4.1	0.811
Consistently courteous with customers	1(0.3)	-	49(13.4)	151(41.3)	165(45.1)	4.31	0.718
Basic knowledge to answer questions	5(1.4)	1(0.3)	24(6.6)	162(44.3)	174(47.5)	4.36	0.738

Table 5.12 indicates that the majority of respondents agreed and strongly agreed with courtesy, credibility, and security of the general behavior of the employees of the service organization, together with their ability to offer assurance and confidentiality to customers through their competence, privacy, courteousness, credibility, and effective communication. Services related to assurance should be offered by excellent banks. Most of the respondents had high expectations.

5.5.5 Descriptive Analysis of Empathy

Empathy should be offered by excellent banks. Empathy includes the personal interest and personal care that the organization offers to its customers by putting the service deliverer himself in the position of the customer to experience the customers' feelings. Empathy includes the caring and individualized attention that the organization provides to its customers, as shown in Table 5.13.

Table 5.13: Descriptive Analysis of Empathy

Items	strongly disagree	Disagree	Neutral	Agree	strongly agree	Mean	St. Dev
	N (%)						
Individual attention	-	11(3)	32(8.7)	178(48.6)	145(39.6)	4.25	0.737
Operating hours convenient	-	19(5.2)	26(7.1)	182(49.7)	139(38)	4.2	0.786
Give customers personal attention	14(3.8)	8(2.2)	36(9.8)	173(47.3)	135(36.9)	4.11	0.943
Interest of their customer	1(0.3)	15(4.1)	14(3.8)	187(51.1)	149(40.7)	4.28	0.747
Understand the specific needs of customers	2(0.5)	8(2.2)	20(5.5)	195(53.3)	141(38.5)	4.27	0.71

Table 5.13 indicates that the majority of respondents agreed and strongly agreed with the empathy dimension, which should be offered by excellent banks. Empathy includes the personal interest and personal care that the organization offers to its customers by putting the service deliverer himself in the position of the customer to be able to experience the customer's feelings. Empathy includes the caring attitude and the individualized attention that the organization provides to its customers. The expectation of most respondents was high.

5.6 DESCRIPTIVE ANALYSIS OF PERCEIVED SERVICE QUALITY

The levels of perceived service quality with regard to services and products are shown in Tables 5.14 to 5.18. This section examines the opinions of the customers about the service and products offered by their banks, or the actual services offered by these banks to their customers. Twenty-two items were used to measure perceived service quality; five sub-dimensions existed. As presented in the following tables, 4 items measured Tangibility, 5 items measured Reliability, 4 items measured Responsiveness, 5 items measured Assurance, and 5 items measured Empathy.

5.6.1 Descriptive Analysis of Tangibility

Tangibility represents the various types of material facilities, or the actual services offered by the banks to their customers, including equipment, appearance of personnel, logos, and the means of contact used by the organization, as shown in Table 5.14.

Table 5.14: Descriptive Analysis of Tangibility

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
Equipment and tools	10(2.7)	54(14.8)	17(4.6)	273(74.6)	12(3.3)	3.61	0.874
Physical facilities visually appealing	13(3.6)	17(4.6)	20(5.5)	302(82.5)	14(3.8)	3.78	0.744
Employees neat appearing	6(1.6)	10(2.7)	32(8.7)	304(83.1)	14(3.8)	3.85	0.6
General appearance compatible with service	6(1.6)	73(19.9)	108(29.5)	170(46.4)	9(2.5)	3.28	0.866

Table 5.14 indicates that the majority of respondents agreed and strongly agreed with the equipment, appearance of personnel, logos, and the means of contact used by the organization. The opinions of the respondents about the tangibility dimension indicate satisfaction, except that some of them disagreed with these services.

5.6.2 Descriptive Analysis of Reliability

Reliability represents the ability to fulfil the promises of efficiency in providing the same level of quality of service and the ability to perform dependably and accurately the service, which is based on the actual services offered by the banks to their customers, as shown in Table 5.15.

Table 5.15: Descriptive Analysis of Reliability

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
They do as promised	18(4.9)	170(46.4)	116(31.7)	56(15.3)	6(1.6)	2.62	0.86
Show a sincere interest in solving problems	33(9)	189(51.6)	92(25.1)	46(12.6)	6(1.6)	2.46	0.884
Right service from the first time	45(12.3)	191(52.2)	92(25.1)	33(9)	5(1.4)	2.35	0.859
Provided the service at the time	60(16.4)	191(52.2)	74(20.2)	37(10.1)	4(1.1)	2.27	0.892
Keep error free records	3(0.8)	7(1.9)	22(6)	287(78.4)	47(12.8)	4.01	0.583

Table 5.15 indicates that the majority of respondents disagreed and strongly disagreed with the ability to fulfil the promises of efficiency in providing the same level of quality of service and the ability to dependably and accurately perform the service, which are based on the actual services offered by the banks to their customers. Some respondents were dissatisfied with these services, whereas others were satisfied with these services.

5.6.3 Descriptive Analysis of Responsiveness

Responsiveness represents the desire or willingness of the service provider to help customers and deliver the services to them; this dimension includes promptness,

convenience, accessibility, and effective communication. These aspects are based on the actual services offered by the banks to their customers, as shown in Table 5.16.

Table 5.16: Descriptive Analysis of Responsiveness

Items	strongly disagree	Disagree	Neutral	Agree	Strongl y agree	Mean	St. Dev
	N (%)						
When service will be performed	22(6)	128(35)	171(46.7)	38(10.4)	7(1.9)	2.67	0.815
Provide prompt service	47(12.8)	191(52.2)	90(24.6)	32(8.7)	6(1.6)	2.34	0.87
Always be willing to help	52(14.2)	197(53.8)	67(18.3)	44(12)	6(1.6)	2.33	0.92
Never be too busy to respond	94(25.7)	189(51.6)	54(14.8)	27(7.4)	2(0.5)	2.05	0.865

Table 5.16 indicates that the majority of respondents disagreed and strongly disagreed with the expression of desire or willingness of the service provider to help customers and deliver the services to them; this dimension includes promptness, convenience, accessibility, and effective communication. These aspects are the actual services offered by the banks to their customers. Most respondents were dissatisfied with these services; only some of them were satisfied with these services.

5.6.4 Descriptive Analysis of Assurance

Assurance is represented by competence, courtesy, credibility, and the security general behavior of the employees of the service organization, together with their

ability to offer assurance and confidentiality to customers through their competence, privacy, courteousness, credibility, and effective communication based on the actual services offered by the banks to their customers, as shown in Table 5.17.

Table 5.17: Descriptive Analysis of Assurance

Items	strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
instill confidence in customers	2(0.5)	14(3.8)	70(19.1)	267(73)	13(3.6)	3.75	0.607
Feel safe in transactions	2(0.5)	13(3.6)	107(29.2)	228(62.3)	16(4.4)	3.66	0.645
Consistently courteous with customers	4(1.1)	11(3)	61(16.7)	280(76.5)	10(2.7)	3.77	0.6
Have basic knowledge to answer questions	11(3)	163(44.5)	147(40.2)	43(11.7)	2(0.5)	2.62	0.751

Table 5.17 indicates that the majority of respondents agreed and strongly agreed with the courtesy, credibility, and security, and the general behavior of the employees of the service organization, together with their ability to offer assurance and confidentiality to customers through their competence, privacy, courteousness, credibility, and effective communication. These aspects are the actual services offered by the banks to their customers. Most respondents were satisfied with the Assurance dimension; only some of them were dissatisfied with these services.

5.6.5 Descriptive Analysis of Empathy

Empathy relates to the actual services offered by the banks to their customers. This dimension includes the personal interest and personal care that the organization offers to its customers by putting the service deliverer himself in the position of the customer to experience the customer’s feelings. Empathy includes the caring attitude and individualized attention that the organization provides to its customers, as shown in Table 5.18.

Table 5.18: Descriptive Analysis of Empathy

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	St. Dev
	N (%)						
Individual attention	114(31.1)	153(41.8)	87(23.8)	12(3.3)	-	1.99	0.826
Operating hours convenient	123(33.6)	176(48.1)	63(17.2)	4(1.1)	-	1.86	0.73
Give customers personal attention	95(26)	199(54.4)	54(14.8)	18(4.9)	-	1.99	0.778
Consider the interest of their customer	78(21.3)	215(58.7)	60(16.4)	13(3.6)	-	2.02	0.721
Understand the specific needs of customers	75(20.5)	222(60.7)	57(15.6)	12(3.3)	-	2.02	0.702

Table 5.18 indicates that the majority of respondents disagreed and strongly disagreed with the personal interest and personal care that the organization offers to its customers by putting the service deliverer himself in the position of the customer to be able to experience the customer’s feelings. Empathy includes the caring attitude and individualized attention that the organization provides to its customers. Empathy

relates to the actual services offered by the banks to their customers. Most respondents were dissatisfied with the services in the Empathy dimension; only some of them were satisfied with them.

5.7 NORMALITY TEST

This section sheds light on the normality test and assesses the skewness and kurtosis of the normal distribution of each variable. The SPSS software package was used to generate the skewness and kurtosis. The results related to the normality test for the sample indicate that the absolute values of skewness were -2.52 and kurtosis 8.69, respectively (Appendix C, page, 208). These values were less than their respective cut-offs of 3 for skewness and 10 for kurtosis, as suggested by Kline (2005), implying that the observed variables in sample one were approximately normally distributed.

5.8 CONFIRMATORY FACTOR ANALYSIS

In order to achieve the best model for the Expected Service Quality (ESQ), Perceived Service Quality (PSQ), Awareness (AW), and Satisfaction (SAT), reliability and validity measurement analyses were performed. This version of reliability and validity testing is not similar to the reliability and validity testing of the coefficients of the items of the variables included in the study. The confirmatory analysis performed by the way of reliability and validity testing results in various orders of model fit. The highest order model fit to test the underlying hypotheses by testing the conceptual model in the SEM.

Both ESQ and PSQ have five important factors, namely, tangibility (TAN), reliability (REL), responsiveness (RES), assurance (ASS), and empathy (EM). To evaluate the reliability and validity of the proposed measurement model, the confirmatory factor analysis (CFA) was conducted to identify problematic items that caused high residual, high covariance, and might be omitted from the analysis or model revision, depending on which is suitable. An individual model CFA is employed, followed by a full model CFA that incorporates ESQ, PSQ, AW, and SAT.

The CFA is a theory-driven analysis and is a confirmatory technique that confirms the appropriateness or practicality of a theory. Based on this premise, as Schreiber et al. (2006) once mentioned, the planning of the analysis is driven by the theoretical relationships among the observed and unobserved variables. In the CFA, the current study employed the “omit-item” approach to eliminate any items that jeopardized the goodness of fit of the model. Furthermore, any items showing factor loadings lower than 0.5 were discarded because they do not have any practical contribution to the model (Hair et al., 2010). In addition, deleting item(s) will also increase model parsimony (Holmes-Smith, 2001). Hair et al. (2006) have argued that at least three items should exist for each dimension. Therefore, the current study has adopted the advice by Hair et al. (2006), and ensured that the model has at least three items for each factor when the omit-item approach is employed (i.e., the balance between model fit and the retained information).

Researchers typically re-specify models to achieve a better model fit without making drastic modifications to the model. Before re-specifying the model, a study looks into two indicators, namely, the modification indices (MIs) and the standardized residual. The study essentially correlates or deletes items one-by-one starting from the item

with the highest MI. Aside from assessing through MIs, the study likewise checked the standardized residual. According to Hair et al. (2010), a standardized residual of less than 2.5 does not suggest a problem, but a standardized residual greater than 4.0 raises a red flag and suggests a potentially unacceptable degree of error. A standardized residual between 2.5 and 4.0 deserves some attention but may not require changes to the model if no other problems are associated with those two items. Hair et al. (2010) emphasized that multiple fit indices should be assessed before a model's goodness of fit and the guidelines are concluded. Therefore, this study looks into chi square (X^2), normed chi-square (X^2/df), GFI, CFI, and RMSEA.

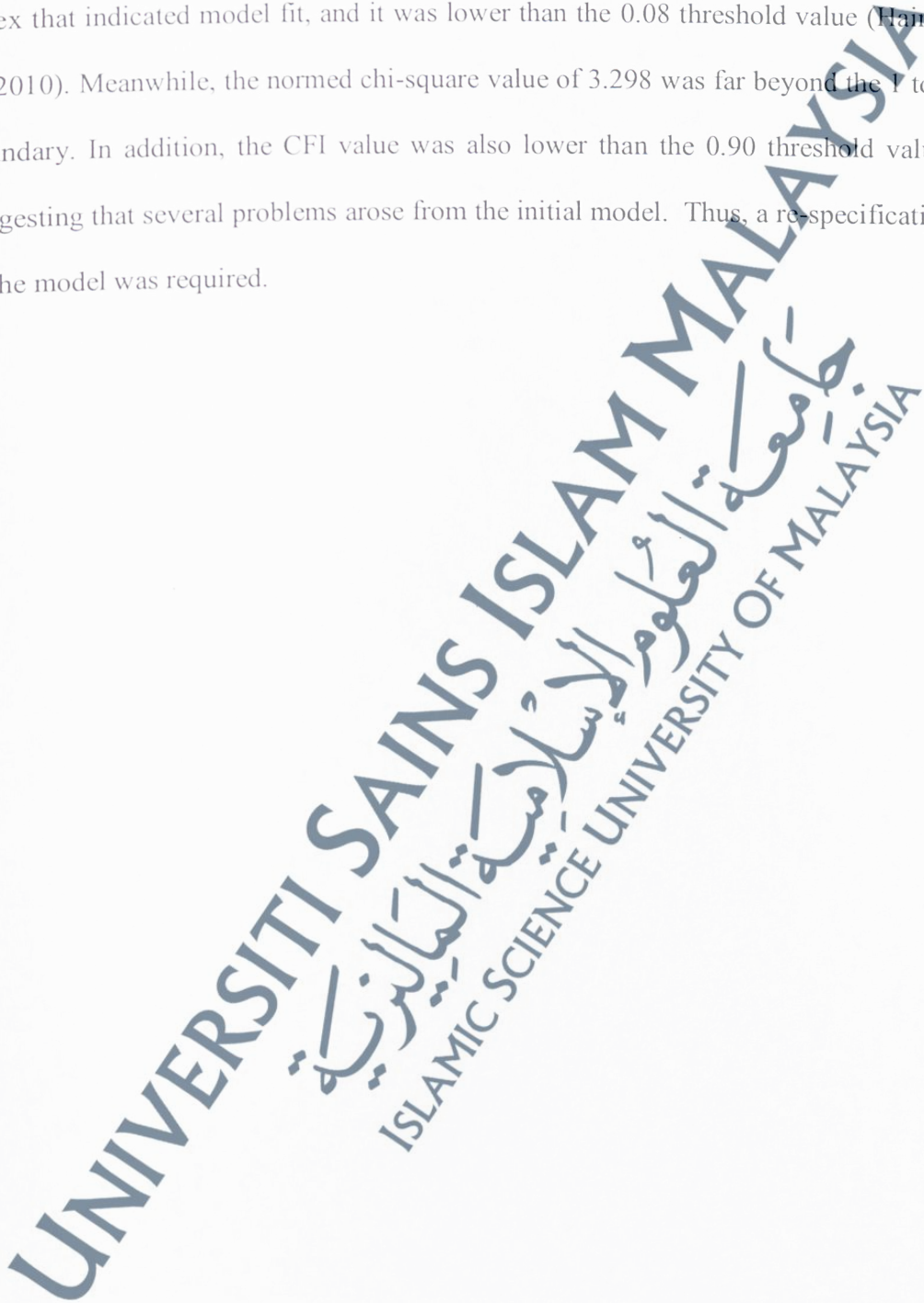
5.8.1 Modelling for the ESQ Factors in Islamic Window Banks in Libya

The following section provides the CFA results for the ESQ measurement model, which consists of five sub-dimensions, namely, Tangibility, Reliability, Responsiveness, Assurance, and Empathy. This section analyzed the model in the first and second order, which is detailed as follows.

5.8.1.1 First-order CFA Model for ESQ

The first-order CFA model for Expected Service Quality was designed to test the relationships between the five sub-dimensions of ESQ (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) and their observed variables (indicators), as presented in Figure 5.1. Initially, TAN consisted of 4 items, REL consisted of 5 items, RES consisted of 4 items, ASS consisted of 4 items, and EM consisted of 5

items. The results of the initial CFA model for the ESQ are reported in Table 5.19. The model did not show a good model fit, as the RMSEA value 0.079 was the only index that indicated model fit, and it was lower than the 0.08 threshold value (Hair et al. 2010). Meanwhile, the normed chi-square value of 3.298 was far beyond the 1 to 3 boundary. In addition, the CFI value was also lower than the 0.90 threshold value, suggesting that several problems arose from the initial model. Thus, a re-specification of the model was required.



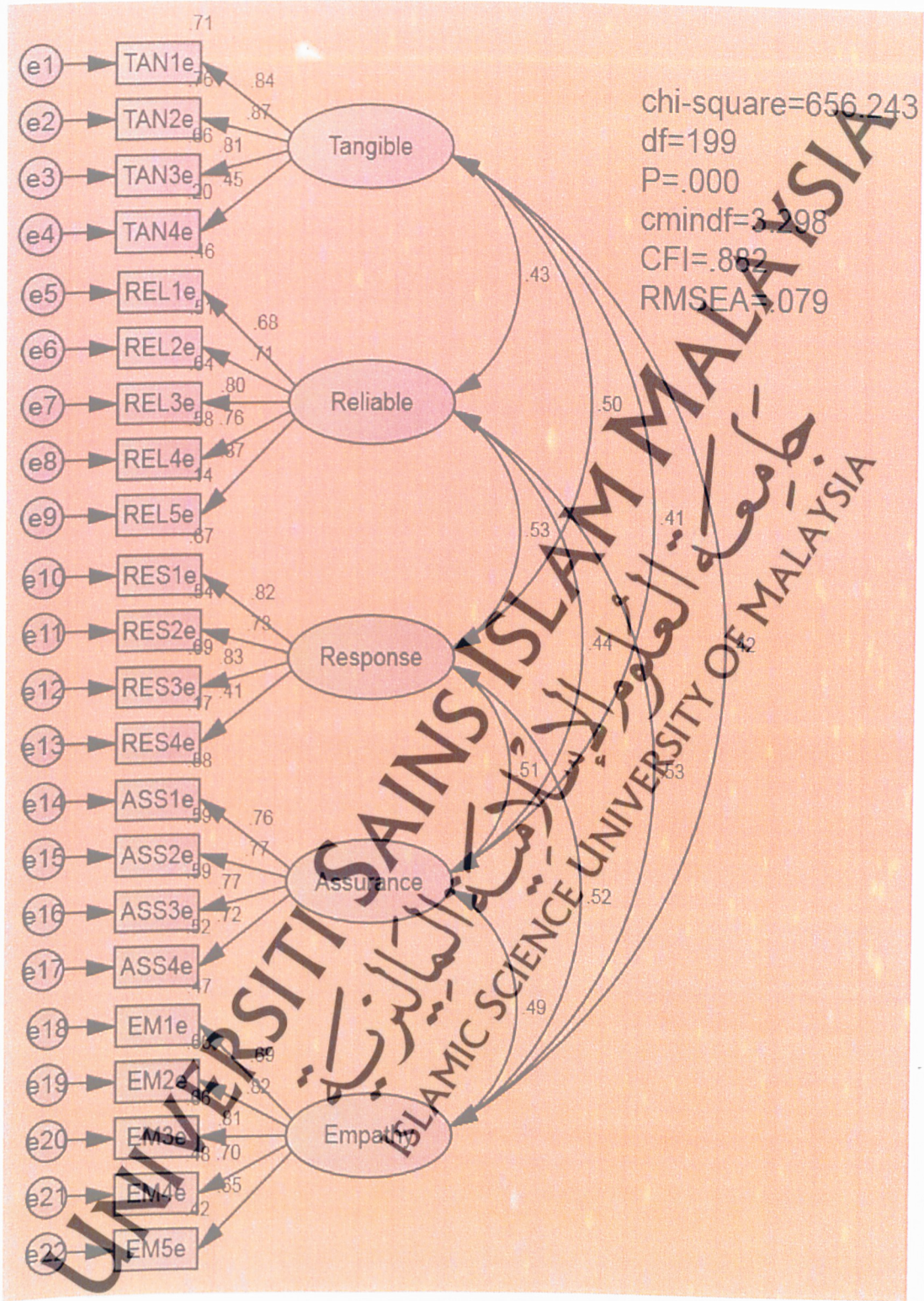


Figure 5.1 First-Order CFA Model for Expected Service Quality (Initial)

Table 5.19 Fit Indices of the First-Order CFA Model for Expected Service Quality (initial)

Goodness of Fit Indices	Values
Chi-square (X^2)	656.243
Degree of Freedom (df)	199
CMINDF (Normed X^2)	3.298
Goodness-of-Fit Index (GFI)	0.863
Comparative Fit Index (CFI)	0.882
Root Mean Square Error of Approximation (RMSEA)	0.079

With regard to the factor loading, the MI and the standardized residual covariance (Appendix D page, 210), a few items were omitted from the analysis, particularly TAN4e, REL5e, RES4e, EM4e, and EM5e. After discarding the five indicators, CFA was conducted again with the final results of the first-order CFA for ESQ (revised), as illustrated in Figure 5.2. The re-specified model (Table 5.20) resulted in a good model fit, supported by the RMSEA value of 0.049, which was lower than the 0.08 threshold value. Furthermore, both the CFI (0.968) and GFI (0.939) were higher than 0.9. The normed chi-square value of 1.881 likewise fell within the range of 1 to 3. Apparently, all model fit indices now met the threshold value, as suggested by Hair et al. (2010). The present study concludes that the first-order CFA model for ESQ indicated a good model fit to the sample data.

The factor loadings of the revised first-order CFA model for ESQ are summarized in Table 5.21, and the composite reliability values are also provided to assess the reliability of the ESQ model. Based on the table, all factor loadings for indicators were significant. The composite reliability values for each construct in the ESQ were all greater than the 0.7 cut-off point; the values ranged from 0.829 to 0.881, indicating

that all constructs in the ESQ were reliable. For a more stringent evaluation of construct validity, the results of the AVE and squared multiple correlation among the latent variables are summarized in Table 4.6. As Hair et al. (2010) mentioned, to obtain good discriminant validity, the AVE of a particular construct must be higher than the squared multiple correlation of that construct with other corresponding constructs, whereas the AVE should be higher than 0.5 to demonstrate convergent validity. As shown in Table 5.22, all AVE values were greater than 0.5, and they were greater than their corresponding squared multiple correlation. Thus, the revised ESQ model has adequate convergent and discriminant validity, as well as construct reliability.

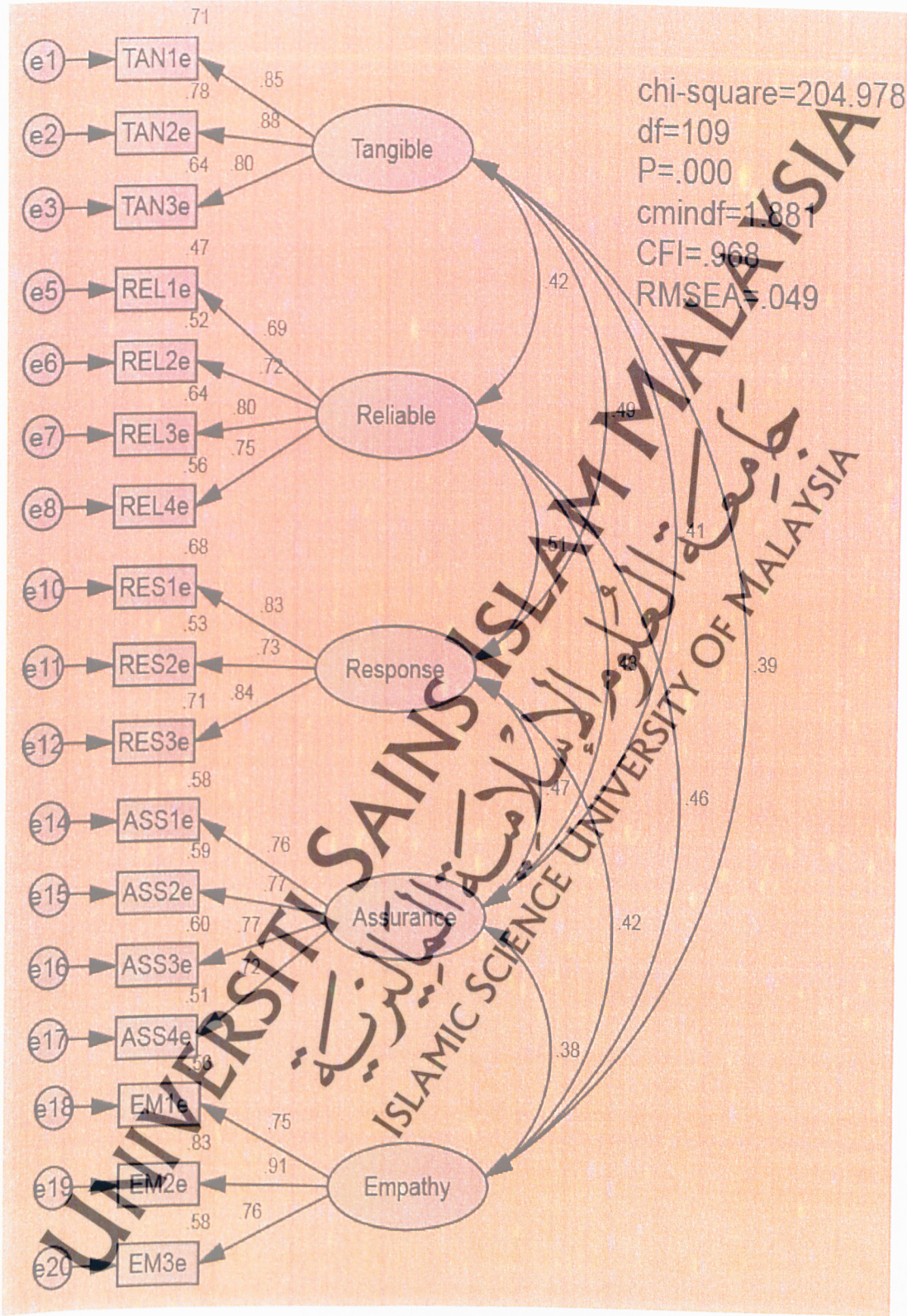


Figure 5.2 First-Order CFA Model for Expected Service Quality (revised)

Table 5.20 Fit Indices of First-Order CFA Model for Expected Service Quality
(revised)

Goodness of Fit Indices	Values
Chi-square (X^2)	204.978
Degree of Freedom (df)	109
CMINDF (Normed X^2)	1.881
Goodness-of-Fit Index (GFI)	0.939
Comparative Fit Index (CFI)	0.968
Root Mean Square Error of Approximation (RMSEA)	0.049

Table 5.21: Factor loading for first order CFA Expected Service Quality
(revised)

			B	Beta	P	CR
Q1	<---	Tangible	1	0.845		0.881
Q2	<---	Tangible	0.991	0.883	***	
Q3	<---	Tangible	0.91	0.802	***	
Q5	<---	Reliable	1	0.688		0.829
Q6	<---	Reliable	1.118	0.723	***	
Q7	<---	Reliable	1.097	0.802	***	
Q8	<---	Reliable	1.059	0.746	***	
Q10	<---	Response	1	0.826		0.843
Q11	<---	Response	0.829	0.729	***	
Q12	<---	Response	1.091	0.844	***	
Q14	<---	Assurance	1	0.765		0.843
Q15	<---	Assurance	1.079	0.771	***	
Q16	<---	Assurance	0.957	0.773	***	
Q17	<---	Assurance	0.911	0.716	***	
Q18	<---	Empathy	1	0.748		0.850
Q19	<---	Empathy	1.297	0.91	***	
Q20	<---	Empathy	1.302	0.762	***	

Table 5.22: AVE and squared multiple correlation ESQ (revised)

	Empathy	Assurance	Response	Reliable	Tangible
Empathy	0.656				
Assurance	0.146	0.572			
Response	0.176	0.222	0.642		
Reliable	0.215	0.187	0.259	0.549	
Tangible	0.148	0.167	0.240	0.178	0.712

5.8.1.2 Second-order CFA Model for ESQ

The second-order CFA model for Expected Service Quality was conducted to ascertain the underlying relationships between the five sub-dimensions of ESQ (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) with a primary variable of expected service, as depicted in Figure 5.3. The model fit results for the second-order CFA model for the ESQ are presented in Table 4.23. The second order of the model seems to indicate a good model fit for the sample data. The chi-square value was 207.339 (df = 114) resulting in a normed chi-square value of 1.819, which is within the range of 1 to 3. Furthermore, both the GFI and CFI values were higher than the 0.9 threshold values, suggesting a satisfactory fit of the second-order ESQ model. Finally, the RMSEA value was lower than the threshold value of 0.08, posited at 0.047. Based on these findings, the second-order ESQ model is fit and may be employed in the SEM analysis.

The factor loadings of the second-order CFA model for the ESQ are presented in Table 5.24. All factor loadings in the model are statistically significant at the 0.05 levels and, most importantly, are higher than 0.5. All factor loadings for the second-

order factors were also greater than 0.5, suggesting good convergent validity. With regard to construct reliability, the first and second order of constructs apparently demonstrated good reliability for the ESQ, ranging from 0.797 to 0.881. In terms of the construct validity, given that this second-order model had only one abstract factor (ESQ), discriminant validity was not the main concern. Moreover, the factor loading values associated with the five first-order factors indicate that Responsiveness (Beta = 0.733) was the strongest indicator of the second-order factor (ESQ), followed by Reliability (Beta = 0.698), Assurance (Beta = 0.633), Tangibility (Beta = 0.64), and Empathy (Beta = 0.603).

These results support Hypotheses H1b and H2b and reject H1a and H2a, as stated in Chapter Three.

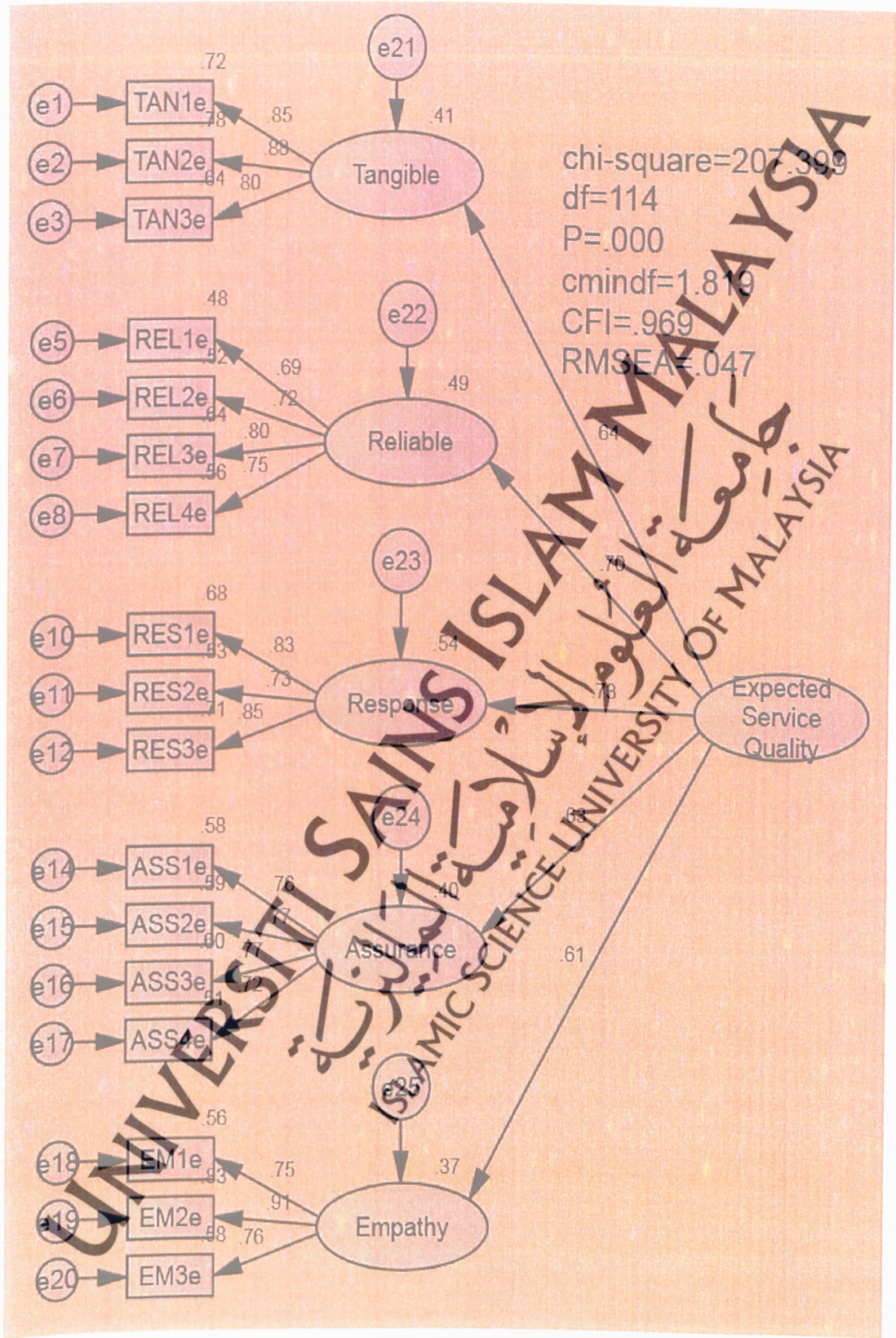


Figure 5.3 Second-Order CFA Model for Expected Service Quality

Table 5.23 Fit Indices of Second-Order CFA Model for Expected Service Quality

Goodness of Fit Indices	Values
Chi-square (X^2)	207.399
Degree of Freedom (df)	114
CMINDF (Normed X^2)	1.819
Goodness-of-Fit Index (GFI)	0.938
Comparative Fit Index (CFI)	0.969
Root Mean Square Error of Approximation (RMSEA)	0.047

Table 5.24 Factor loading for second-order CFA Expected Service Quality

			B	Beta	P	CR
Tangible	<---	ESQ	1	0.64		0.797
Reliable	<---	ESQ	1.106	0.698	***	
Response	<---	ESQ	1.519	0.733	***	
Assurance	<---	ESQ	1.302	0.633	***	
Empathy	<---	ESQ	1.189	0.609	***	
Q1	<---	Tangible	1	0.846		0.881
Q2	<---	Tangible	0.99	0.882	***	
Q3	<---	Tangible	0.911	0.803	***	
Q5	<---	Reliable	1	0.69		0.829
Q6	<---	Reliable	1.116	0.724	***	
Q7	<---	Reliable	1.091	0.8	***	
Q8	<---	Reliable	1.055	0.746	***	
Q10	<---	Response	1	0.826		0.843
Q11	<---	Response	0.828	0.728	***	
Q12	<---	Response	1.093	0.845	***	
Q14	<---	Assurance	1	0.764		0.842
Q15	<---	Assurance	1.079	0.771	***	
Q16	<---	Assurance	0.958	0.773	***	
Q17	<---	Assurance	0.911	0.716	***	
Q18	<---	Empathy	1	0.746		0.850
Q19	<---	Empathy	1.302	0.911	***	
Q20	<---	Empathy	1.305	0.762	***	

5.9.1 Modelling for the PSQ Factors in Islamic Window Banks in Libya

The following section provides the CFA results for the PSQ, which consists of five sub-dimensions, namely, Tangibility, Reliability, Responsiveness, Assurance, and Empathy. This section analyzes the model in the first, second, and third order, which is detailed as follows.

5.9.1.1 First-order CFA Model for PSQ

The first-order CFA model for Perceived Service Quality was designed to test the relationships between the five sub-dimensions of PSQ (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) and their observed indicators (Figure 5.4). From the beginning, TAN consisted of 4 items, REL consisted of 5 items, RES consisted of 4 items, ASS consisted of 4 items, and EM consisted of 5 items. The model fit results of the CFA of the initial model for PSQ are reported in Table 5.25. The model showed an adequate fit with the data, as the RMSEA value was 0.066 lower than the 0.08 threshold value. Furthermore, the normed chi-square value of 2.578 was within the 1 to 3 boundary. The CFI value was likewise higher than the 0.90 threshold value, suggesting that the model was a good fit. Nevertheless, looking at the factor loadings of indicators, some indicators are insignificant or lower than 0.5. Therefore, a minor model re-specification is required to achieve a parsimonious model with a comparable model fit.

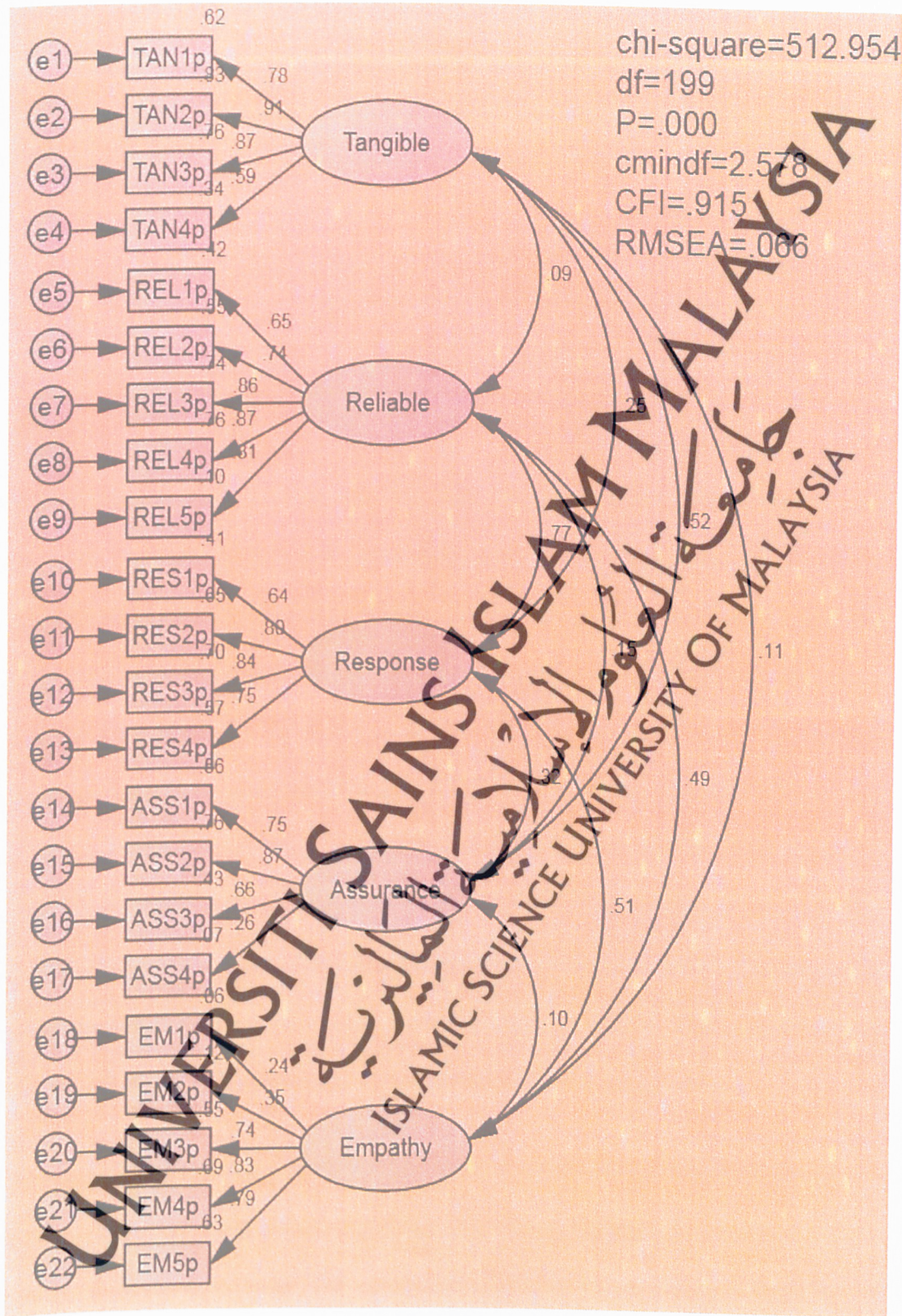


Figure 5.4 First-Order CFA Model for Perceived Service Quality (initial)

Table 5.25 Fit Indices of First-Order CFA Model for Perceived Service Quality (initial)

Goodness of Fit Indices	Values
Chi-square (X^2)	512.954
Degree of Freedom (df)	199
CMINDF (Normed X^2)	2.578
Goodness-of-Fit Index (GFI)	0.885
Comparative Fit Index (CFI)	0.915
Root Mean Square Error of Approximation (RMSEA)	0.066

With regard to factor loading, the MI, and the standardized residual covariance (Appendix E, page, 224), a few items were omitted from the analysis, particularly TAN4p,REL1p, REL5p, RES1p, ASS4p, EM1p, and EM2p. After discarding the seven indicators, the researcher ran the CFA, and the final results of the first-order CFA for PSQ (revised) are shown in Figure 5.5. As shown in Table 5.26, the re-specified model has a good model fit and it is much better than the initial PSQ model, supported by an RMSEA value of 0.048, which was lower than the 0.08 threshold value. Furthermore, both the CFI (0.977) and GFI (0.950) were higher than 0.9. The normed chi-square value of 1.837 also fell between the range of 1 to 3. The model fit indices met the threshold value suggested by Hair et al. (2010). Thus, the first-order CFA model for PSQ demonstrated a good model fit for the sample data.

Table 5.27 illustrates the factor loadings and the composite reliability values of the revised first-order CFA model for PSQ. All factor loadings for indicators were significant at the 0.05 level. The composite reliability values for each construct of PSQ were all greater than the 0.7 cut-off point, ranging from 0.807 to 0.893; thus, all constructs in the PSQ model were indeed reliable. For a more stringent evaluation of

the construct validity, results of the AVE and squared multiple correlation among the latent variables are summarized in Table 5.28. All AVE values are greater than 0.5, and they are greater than their corresponding squared multiple correlation. Subsequently, this study concludes that the revised version of the PSQ model has adequate convergent and discriminant validity, as well as construct reliability.



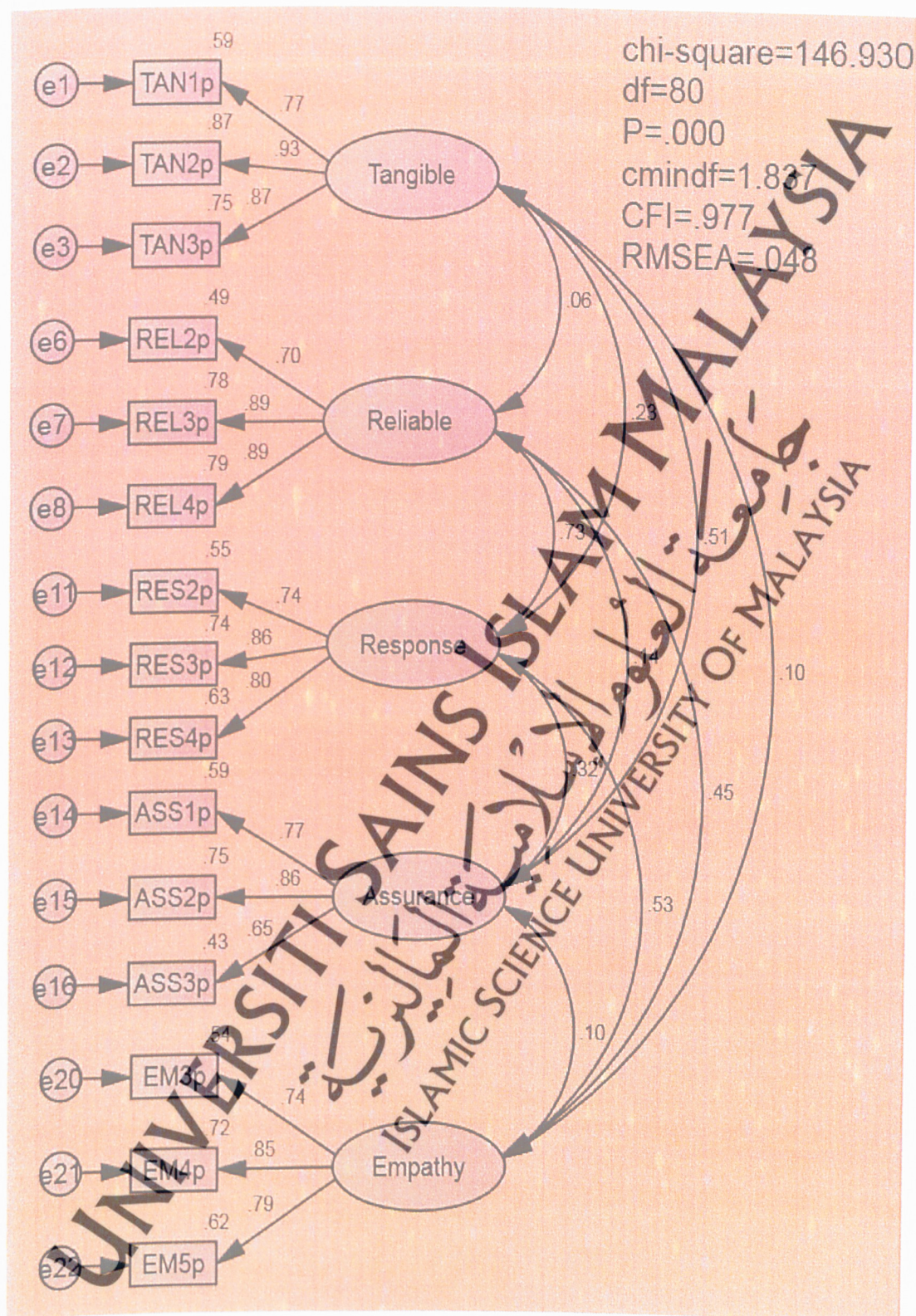


Figure 5.5 First-Order CFA Model for Perceived Service Quality (revised)

Table 5.26 Fit Indices of First-Order CFA Model for Perceived Service Quality (revised)

Goodness of Fit Indices	Values
Chi-square (X^2)	146.93
Degree of Freedom (df)	80
CMINDF (Normed X^2)	1.837
Goodness-of-Fit Index (GFI)	0.95
Comparative Fit Index (CFI)	0.977
Root Mean Square Error of Approximation (RMSEA)	0.048

Table 5.27 Factor loading for first-order CFA Perceived Service Quality (revised)

			B	Beta	P	CR
Q23	<---	Tangible	1	0.768		0.893
Q24	<---	Tangible	1.032	0.932	***	
Q25	<---	Tangible	0.773	0.866	***	
Q28	<---	Reliable	1	0.698		0.868
Q29	<---	Reliable	1.233	0.886	***	
Q30	<---	Reliable	1.289	0.891	***	
Q33	<---	Response	1	0.742		0.841
Q34	<---	Response	1.223	0.858	***	
Q35	<---	Response	1.065	0.795	***	
Q36	<---	Assurance	1	0.766		0.807
Q37	<---	Assurance	1.198	0.863	***	
Q38	<---	Assurance	0.842	0.652	***	
Q42	<---	Empathy	1	0.735		0.834
Q43	<---	Empathy	1.068	0.848	***	
Q44	<---	Empathy	0.966	0.787	***	

Table 5.28 AVE and squared multiple correlation PSQ (revised)

	Empathy	Assurance	Response	Reliable	Tangible
Empathy	0.626				
Assurance	0.010	0.586			
Response	0.276	0.106	0.640		
Reliable	0.206	0.020	0.537	0.689	
Tangible	0.010	0.265	0.054	0.003	0.736

5.9.1.2Second-order CFA Model for PSQ

The second-order CFA model for Perceived Service Quality was designed to test the relationships between the five sub-dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) with a primary variable named as PSQ, as shown in Figure 5.6. The second-order CFA was conducted, and the results of the model fit are presented in Table 5.29. An overall model fit is evident, with an RMSEA value of 0.068, which was lower than 0.08. The CFI value was 0.951, and the GFI value was 0.926, which were higher than the 0.9 threshold value. Furthermore, the normed chi-square value of 2.667 is also within the range of 1 to 3, suggesting a model fit. Nevertheless, a significantly high increment of a Chi-square value exists in the second-order PSQ model from 146.93 to 226.658, suggesting that the second-order PSQ model was not as good as the first-order model. As shown in Table 5.30, the factor loadings for Tangible and Assurance were lower than 0.5, albeit they were significant at the 0.05 level. Thus, the second-order model lacks the convergent validity, as two first-order constructs exhibited low loadings. Some relationships may be hidden among the constructs for the PSQ of consumers. Based on this outcome, the researcher proposes a third order of the PSQ model, in which Tangibility and

Assurance reflect the quality of PSQ, whereas Reliability, Responsiveness, and Empathy reflect the basic quality of PSQ. Subsequently, a third-order CFA model was conducted to ascertain such a hypothesis.

Conversely, these results support Hypotheses H3b and H4b and reject H3a and H4b, as stated in Chapter Three.



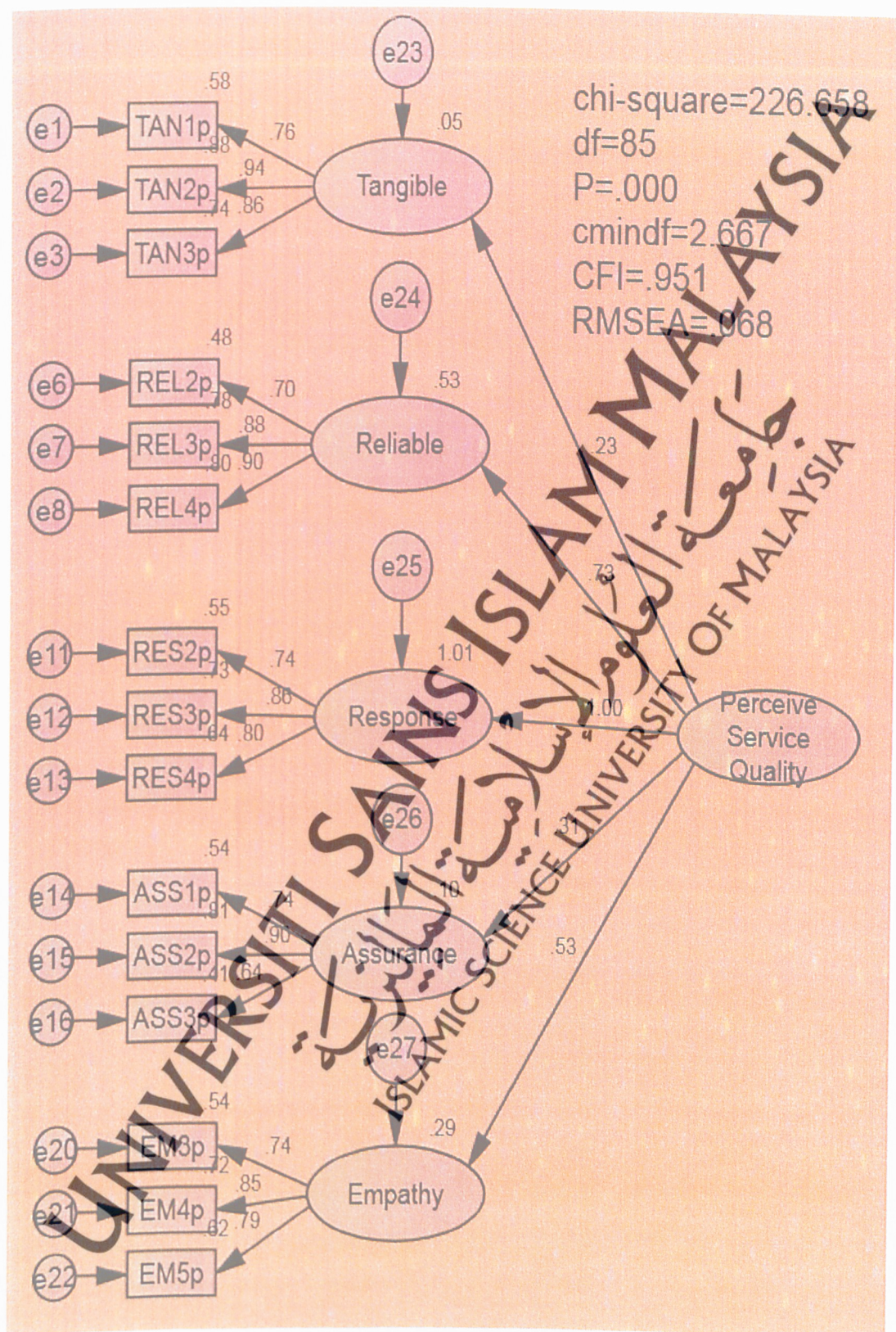


Figure 5.6: Second-Order CFA Model for Perceived Service Quality

Table 5.29 Fit Indices of Second-Order CFA Model for Perceived Service Quality

Goodness of Fit Indices	Values
Chi-square (X^2)	226.658
Degree of Freedom (df)	85
CMINDF (Normed X^2)	2.667
Goodness-of-Fit Index (GFI)	0.926
Comparative Fit Index (CFI)	0.951
Root Mean Square Error of Approximation (RMSEA)	0.068

Table 5.30 Factor loading for second-order CFA Perceived Service Quality

			B	Beta	P	CR
Tangible	<---	PSQ	1	0.226		0.722
Reliable	<---	PSQ	2.975	0.731	***	
Response	<---	PSQ	4.279	1.003	***	
Assurance	<---	PSQ	0.924	0.312	0.004	
Empathy	<---	PSQ	2.025	0.534	***	
Q23	<---	Tangible	1	0.764		0.892
Q24	<---	Tangible	1.044	0.937	***	
Q25	<---	Tangible	0.775	0.863	***	
Q28	<---	Reliable	1	0.696		0.867
Q29	<---	Reliable	1.231	0.881	***	
Q30	<---	Reliable	1.301	0.896	***	
Q33	<---	Response	1	0.741		0.841
Q34	<---	Response	1.223	0.856	***	
Q35	<---	Response	1.071	0.798	***	
Q36	<---	Assurance	1	0.736		0.807
Q37	<---	Assurance	1.3	0.901	***	
Q38	<---	Assurance	0.857	0.638	***	
Q42	<---	Empathy	1	0.735		0.833
Q43	<---	Empathy	1.068	0.847	***	
Q44	<---	Empathy	0.966	0.787	***	

5.9.3 Third-order CFA Model for PSQ

The researcher believes that the PSQ of customers was a third-order model. Thus, the CFA for the third-order model was conducted. The third-order CFA model for PSQ was designed to test the relationships between the five sub-dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy), with two factors (basic and quality) and a primary variable named Perceived Service, as illustrated in Figure 5.7. With regard to the model fit, Table 5.31 shows the fit indices for the third-order PSQ model. The model demonstrated an overall fit with the data, as supported by an RMSEA value of 0.049, which was lower than the 0.08 cut-off value, and both the CFI and GFI values were greater than the 0.9 threshold values. The normed chi-square value of 1.888 was also within the range of 1 to 3, suggesting an adequate model fit. In terms of the chi-square, the third-order model shows a comparable value of 158.629, whereas the first-order model had a value of 146.93. Table 5.32 shows that all factor loadings have now exceeded 0.5, suggesting good convergent validity. The constructs, Tangibility and Assurance, were low in loading, but have now both exceeded 0.5, with values of 0.86 and 0.737, respectively. Furthermore, all constructs were reliable, with composite reliability values greater than 0.6, except for the PSQ. This low reliability in PSQ was expected, as only two indicators (sub-dimensions) were involved. Thus, overall, this third-order model performed better and with adequate convergent validity. The uni-dimension PSQ does not need discriminant validity, as this model does not have other constructs.

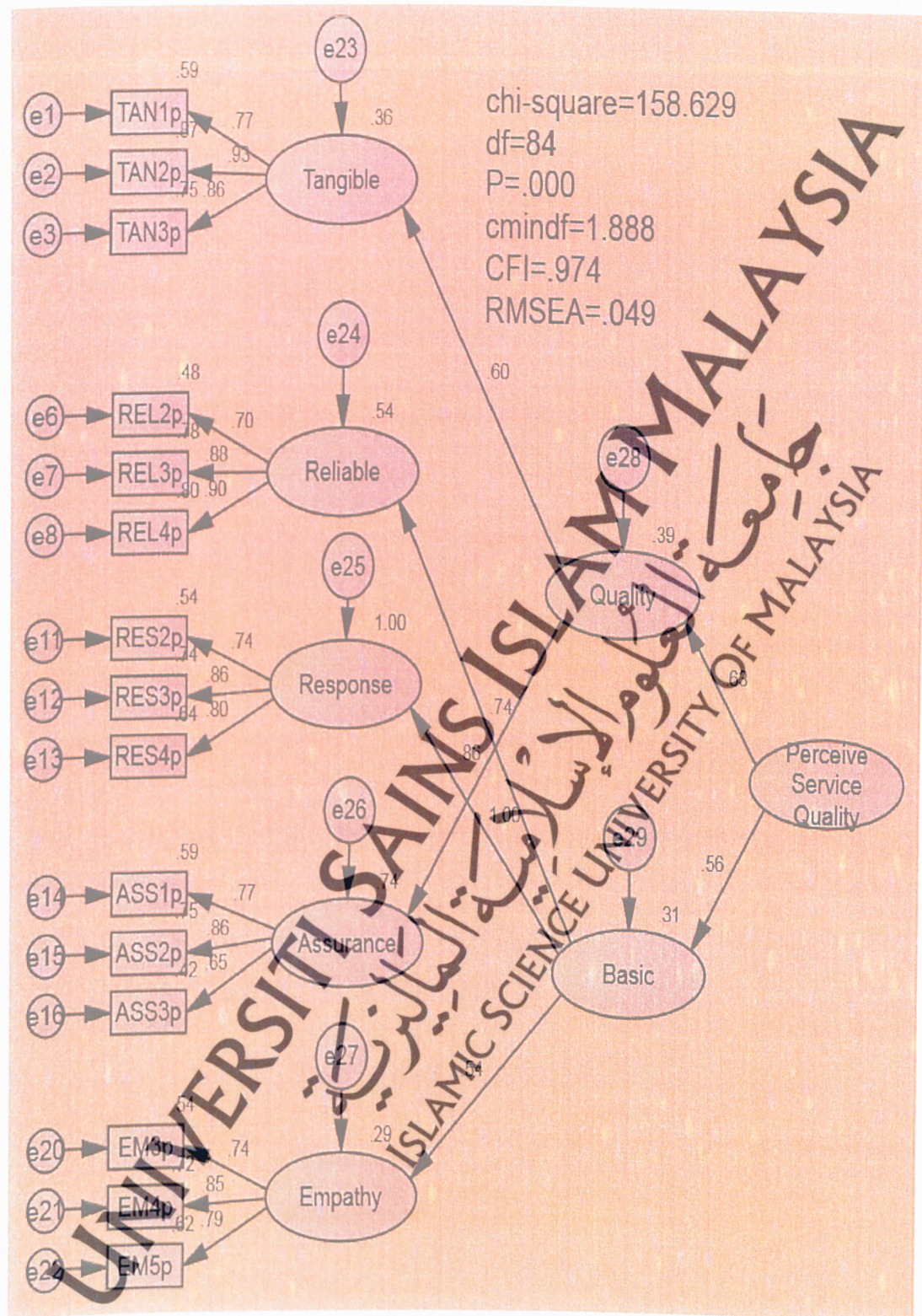


Figure 5.7 Third-Order CFA Model for Perceived Service Quality

Table 5.31 Fit Indices of Third-Order CFA Model for Perceived Service Quality

Goodness of Fit Indices	Values
Chi-square (X^2)	158.629
Degree of Freedom (df)	84
CMINDF (Normed X^2)	1.888
Goodness-of-Fit Index (GFI)	0.946
Comparative Fit Index (CFI)	0.974
Root Mean Square Error of Approximation (RMSEA)	0.049

Table 5.32 Factor loading for second-order CFA Perceived Service Quality

			B	Beta	P	CR
Quality	<---	PSQ	1	0.628		0.520
Basic	<---	PSQ	1	0.557		
Tangible	<---	Quality	1	0.598		0.702
Assurance	<---	Quality	0.994	0.86	***	
Reliable	<---	Basic	1	0.737		0.815
Response	<---	Basic	1.412	0.998	***	
Empathy	<---	Basic	0.679	0.537	***	
Q23	<---	Tangible	1	0.769		0.893
Q24	<---	Tangible	1.032	0.933	***	
Q25	<---	Tangible	0.772	0.865	***	
Q28	<---	Reliable	1	0.696		0.867
Q29	<---	Reliable	1.231	0.881	***	
Q30	<---	Reliable	1.3	0.896	***	
Q33	<---	Response	1	0.737		0.841
Q34	<---	Response	1.232	0.859	***	
Q35	<---	Response	1.077	0.799	***	
Q36	<---	Assurance	1	0.766		0.807
Q37	<---	Assurance	1.198	0.864	***	
Q38	<---	Assurance	0.84	0.651	***	
Q42	<---	Empathy	1	0.735		0.833
Q43	<---	Empathy	1.068	0.847	***	
Q44	<---	Empathy	0.966	0.787	***	

5.10.1 CFA Model for Customer Satisfaction

Five observed indicators were utilized to reflect customer satisfaction; thus, all five were involved in the evaluation of a model fit of uni-dimension satisfaction (Figure 5.8). The results of the model fit through the mean of CFA are reported in Table 4.33. Referring to the indices, the model has a small chi-square value of 4.851, with unity in both the CFI and GFI values (0.995), suggesting that this model fits the data well. In addition, the RMSEA values of exactly zero also show a perfect fit. The normed chi-square value of 0.97 was out of the 1 to 3 range, indicating some violation of the model fit. Nevertheless, from (Appendix F, page, 241), an indicator (SAT4) shows a factor loading of less than 0.5, suggesting that a minor modification was required for the model. Accordingly, SAT4 was discarded; Figure 5.9 shows the revised satisfaction model with four indicators. Table 4.34 presents the indices of model fit, in which all of them have met the model fit requirements, with an RMSEA value below 0.08, CFI and GFI values above 0.9, and a normed chi-square within the 1 to 3 range. Thus, this satisfaction model with four indicators is employed.

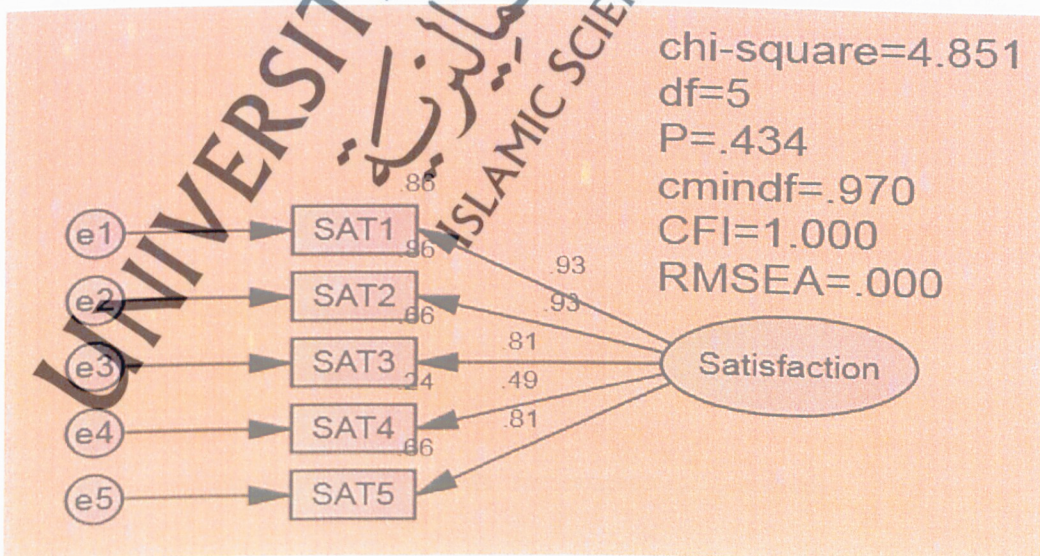


Figure 5.8 CFA model for satisfaction (initial)

Table 5.33 Fit Indices of CFA Model for Satisfaction (initial)

Goodness of Fit Indices	Values
Chi-square (X^2)	4.851
Degree of Freedom (df)	5
CMINDF (Normed X^2)	0.97
Goodness-of-Fit Index (GFI)	0.995
Comparative Fit Index (CFI)	1
Root Mean Square Error of Approximation (RMSEA)	0

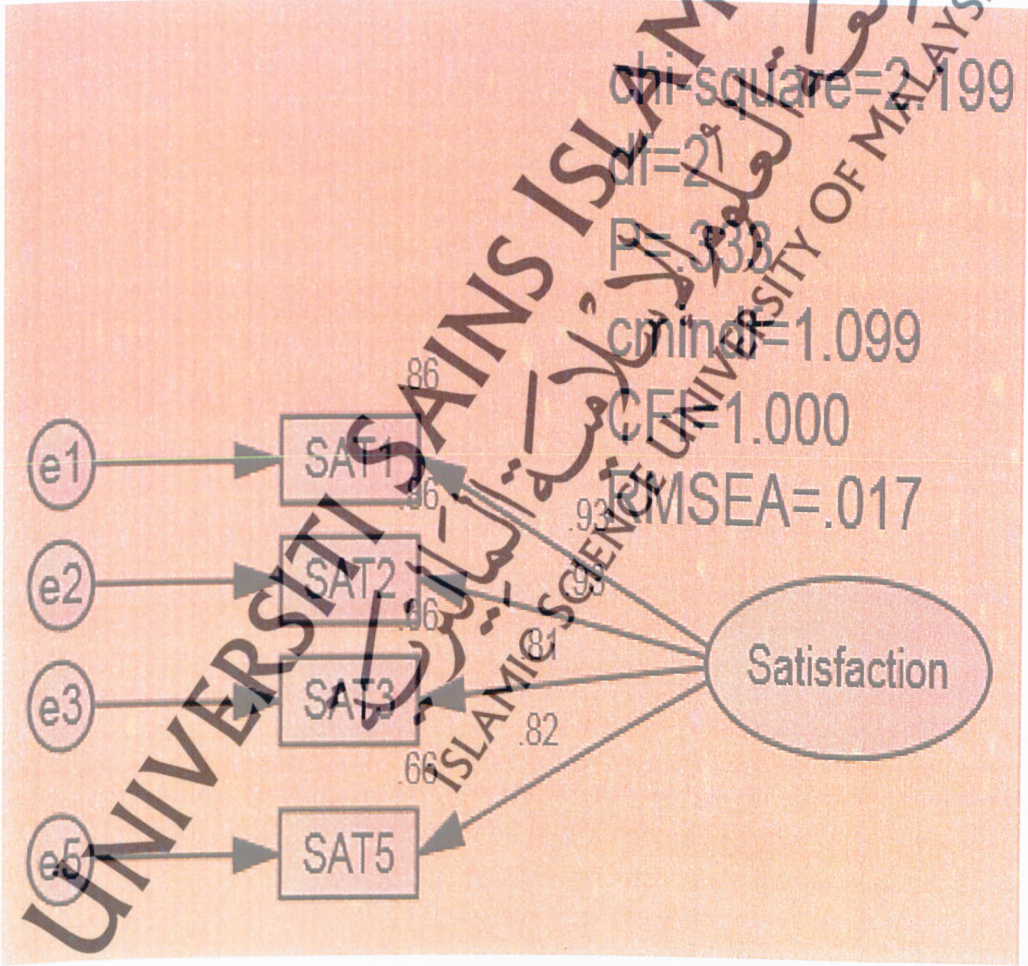


Figure 5.9 CFA model for satisfaction (revised)

Table 5.34 Fit Indices of CFA Model for Satisfaction (revised)

Goodness of Fit Indices	Values
Chi-square (X^2)	2.199
Degree of Freedom (df)	2
CMINDF (Normed X^2)	1.099
Goodness-of-Fit Index (GFI)	0.997
Comparative Fit Index (CFI)	1
Root Mean Square Error of Approximation (RMSEA)	0.017

5.11.1 CFA for Customer Awareness

In the initial customers’ awareness model, six observed indicators were employed to evaluate the model fit, as illustrated in Figure 5.10. The model fit results of the initial awareness model did not show any signs of good model fit. Based on Table 5.35, the normed chi-square indicates a significant deviation from the 1 to 3 range, suggesting a poor model fit. Furthermore, both the CFI and GFI values were lower than the 0.9 threshold values. The RMSEA value of 0.334 was substantially greater than 0.08. These results indicate a very poor model fit. Therefore, a model re-specification was required for this awareness model. Based on the factor loading, the standardized residual, and the MI (Appendix G, page 245), AW1 and AW6 were omitted, and a covariate was drawn between the error terms of AW2 and AW5. Figure 5.11 depicts the revised awareness model, whereas Table 5.36 shows the fit indices of the revised model. The chi-square value has decreased to 1.675; the GFI and CFI values have both exceeded the 0.9 threshold value. Moreover, the normed chi-square value of 1.675 is within the 1 to 3 range, and the RMSEA value of 0.043 is definitely below the 0.08 cut-off point, suggesting that the revised awareness model fits the data well.

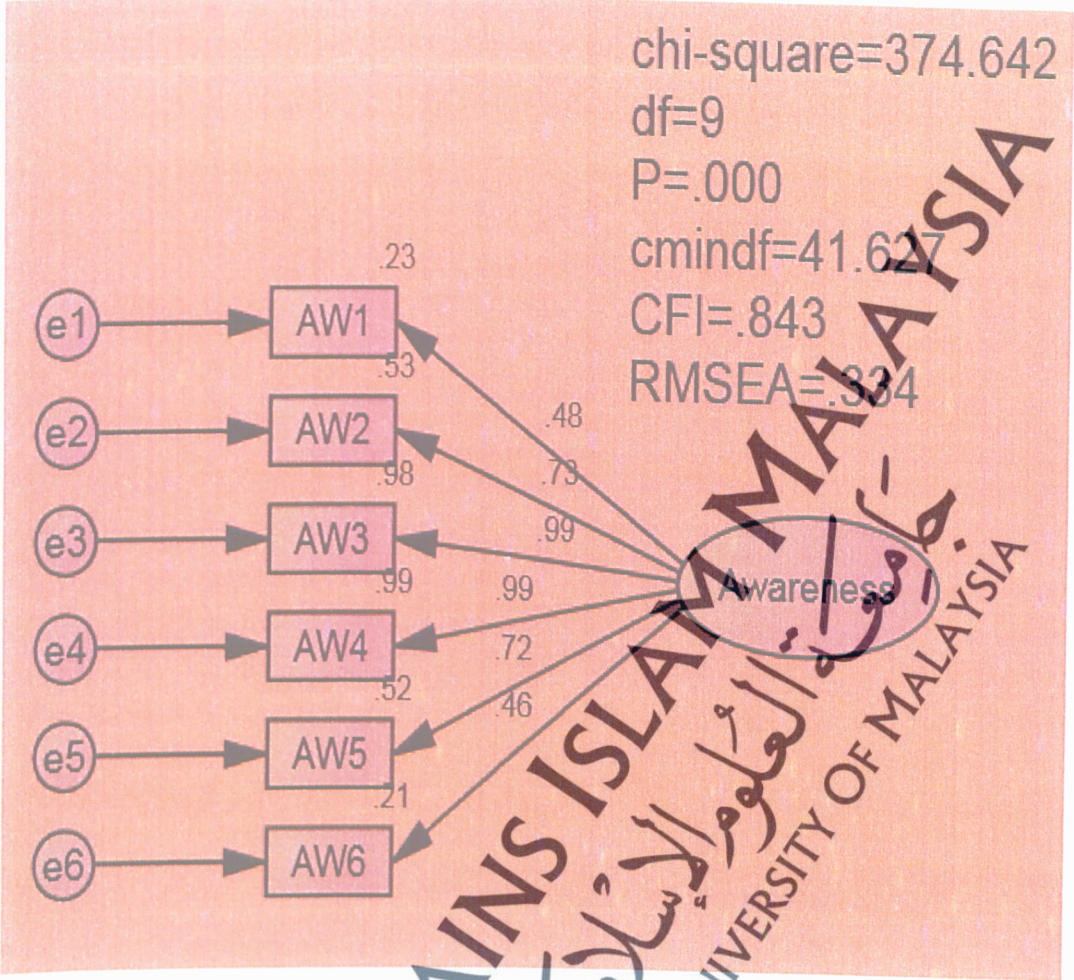


Figure 5.10 CFA model for awareness (initial)

Table 5.35 Fit Indices of CFA Model for awareness (initial)

Goodness of Fit Indices	Values
Chi-square (χ^2)	374.642
Degree of Freedom (df)	9
CMINDF (Normed χ^2)	41.627
Goodness-of-Fit Index (GFI)	0.777
Comparative Fit Index (CFI)	0.843
Root Mean Square Error of Approximation (RMSEA)	0.334

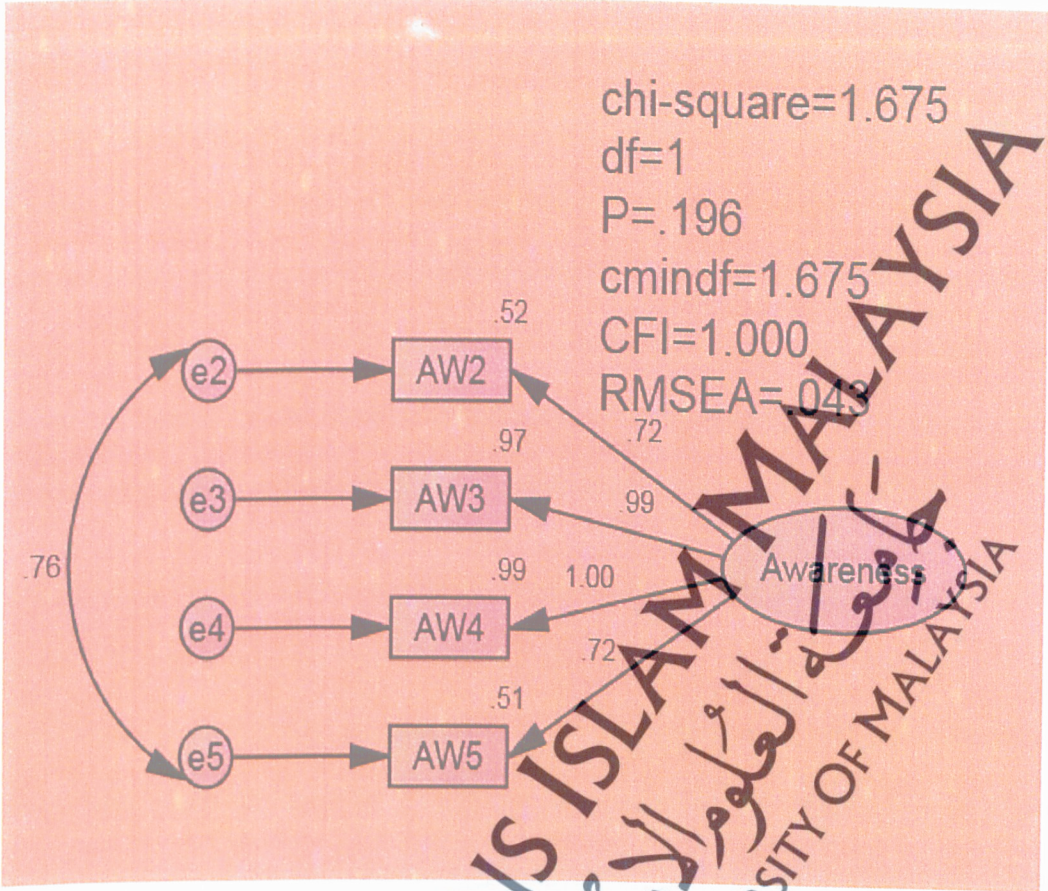


Figure 5.11 CFA model for awareness (revised)

Table 5.36 Fit Indices of the CFA Model for awareness (revised)

Goodness of Fit Indices	Values
Chi-square (X^2)	1.675
Degree of Freedom (df)	1
CMINDF (Normed X^2)	1.675
Goodness-of-Fit Index (GFI)	0.998
Comparative Fit Index (CFI)	1
Root Mean Square Error of Approximation (RMSEA)	0.043

5.12.1 Testing the Proposed Model and Hypotheses

A theory-driven structural equation model was drawn with two exogenous constructs: ESQ and Customer Awareness (AWARE); two endogenous constructs: PSQ and Customer Satisfaction (SAT); and two moderator variables: gender and marital status. Using the result from the CFA, 40 observed indicators were used to estimate the SEM. Prior to assessing the model, assumption checking is necessary, especially for multivariate normality and sample size. A total of 366 respondents were involved in this study, which was more than the standard sample size of 200 for the SEM.

Furthermore, with 40 observed indicators involved, the sample size yielded a variable ratio of 9:1, which is close to the stringent ratio of 10:1 suggested by a number of studies. In the present study, the normality test was conducted for both univariate and multivariate, given the need of AMOS for the normality of variables to yield an unbiased estimation for the parameter. In this study, skewness and kurtosis were employed to evaluate the univariate normality, whereas Mardia's multivariate kurtosis coefficient was employed to confirm the multivariate normality. As a rule of thumb of Kline (2005) for univariate normality, if skewness > 3 and kurtosis > 10 , the variable would violate the normality distribution. Conversely, Bollen (1989) used Mardia's multivariate kurtosis to assess multivariate normality; the Mardia kurtosis must be smaller than $p(p+2)$ to indicate multivariate normality, where p refers to the number of observed indicators.

The results of the normality assessment are provided in Appendix C they demonstrate that the skewness and kurtosis values for each indicator were still within the normality range of 3 for skewness and 10 for kurtosis, albeit some values were as large as 8, suggesting that all indicators approximated a normal distribution. Nevertheless,

multivariate normality is still required to ensure a stable and unbiased estimation of parameters; Mardia's multivariate kurtosis for this study was 225, which was lower than the critical value of 1,680 (40×42). Therefore, the variables exhibited multivariate normality.

The SEM analysis was conducted; its results are presented in Figure 5.12, whereas the fit indices for the SEM are shown in Table 5.37. The results indicate that the model has a chi-square value of 1073.304 and a normed chi-square value of 1.482, which is within the range of 1 to 3, indicating that the SEM has a satisfactory model fit (Appendix H, page, 250). The CFI values of 0.964 were higher than the 0.9 threshold value. Furthermore, the RMSEA value of 0.036 demonstrated a good model fit for the data. Therefore, the SEM has an adequate model fit, and hypothesis testing may be conducted based on Figure 5.12. The analysis was conducted using the maximum likelihood approach, with a 2,000-sample bootstrapping and a 95% bias-corrected confidence interval.

Bootstrapping was conducted in this study for the purpose of obtaining a *p* value of indirect effect, which measures the mediation effect of PSQ. Therefore, the total effect will reflect the direct effect of the exogenous construct toward the endogenous construct without considering the existence of a mediator. Direct effect reflects the direct effect of the exogenous construct toward the endogenous construct adjusted for the effect of the mediator, whereas the indirect effect indicates the mediation effect of the mediator, for instance, the PSQ. Table 5.38 presents the total effect and indirect effect of each construct. Based on the table, the results indicate that excluding the mediation effect (total effect), customer awareness has a significant impact on SAT, with a Beta value of 0.373.

Furthermore, both the PSQ and ESQ have a significant influence on SAT, with Beta values of 0.822 and 0.432, respectively. Comparing the Beta value that ranges from an absolute value of 0 to 1, the PSQ provides the highest impact toward SAT (0.822), followed by ESQ (0.432) and AWARE (0.373). Furthermore, the study also discovers that ESQ has a significant effect on PSQ, with a Beta value of 0.615. The study evaluates the mediation effect of PSQ. The results indicate a significant indirect effect of 0.506 at the 0.05 significance level, suggesting that the PSQ of customers will mediate the relationship between ESQ and SAT. In addition, with the mediation effect of PSQ, the relationship between ESQ and SAT has become insignificantly different from zero (p value > 0.05), implying that the PSQ of consumers fully mediates the relationship between ESQ and SAT.

The study also aims to examine the moderating effect of demographic factors, such as bank types, gender, marital status, and age group; only gender and marital status generate results. This outcome is expected, due to the number of groups for each demographic factor that causes the data to be insufficient for running the SEM analysis. Table 5.39 reports the results of the moderation analysis. For each factor, the model initially estimated freely, and then it estimated with constraints the four relationships, ESQ to PSQ, ESQ to SAT, PSQ to SAT, and AWARE to SAT. The obtained chi-square value and degree of freedom were then used to test the significance of changes in the chi-square value. Significant changes convey that the moderator significantly moderates the relationships. Based on Table 5.39, gender and marital status do not significantly moderate the relationship within the model, which are ESQ to PSQ and SAT, PSQ to SAT, and AWARE to SAT.

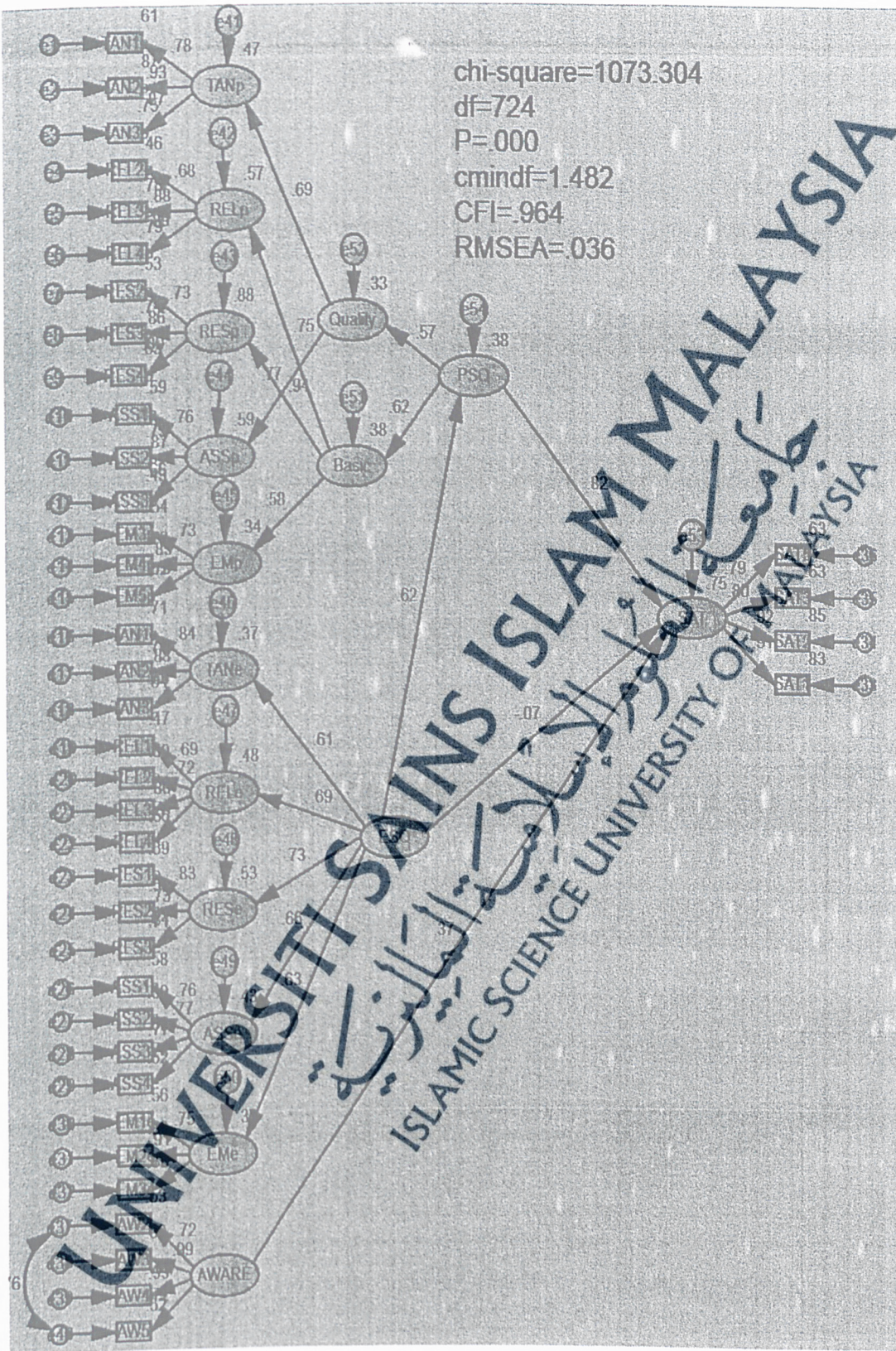


Figure 5.12 Structural Equation Modelling

Table 5.37 Fit Indices for SEM

Goodness of Fit Indices	Values
Chi-square (X^2)	1073.304
Degree of Freedom (df)	724
CMINDF (Normed X^2)	1.482
Goodness-of-Fit Index (GFI)	0.877
Comparative Fit Index (CFI)	0.964
Root Mean Square Error of Approximation (RMSEA)	0.036

Table 5.38 Relationship between construct

			TOTAL BETA	INDIRECT BETA	DIRECT BETA
ESQ	->	SAT	0.432*	0.506*	-0.074
ESQ	->	PSQ	0.615*	-	0.615*
PSQ	->	SAT	0.822*	-	0.822*
AWARE	->	SAT	0.373*	-	0.373*

* Significant at 0.05 significance level

Table 5.39 Moderating effect of gender and marital status

Moderator	Unconstraint	Constrained	Different	df	p
Gender	1963.744	1966.254	2.51	4	0.643
Marital Status	1917.94	1923.327	5.387	4	0.25

5.13 GAP ANALYSIS BETWEEN ESQ AND PSQ

This section discusses the gap between the PSQ of customers and their ESQ. Accordingly, the mean score of each dimension was calculated using the results of the CFA, namely Tangibility, Reliability, Responsiveness, Assurance, and Empathy. In other words, the indicators that remained in a particular dimension will only be used to calculate the aggregated score. Table 5.40 presents the mean score for each

dimension for the ESQ and PSQ, together with the result of the paired *t*-test. All of the *p* values were smaller than the significance level of 0.05, indicating that significant differences exist between the ESQ and PSQ for all dimensions involved. Examining the gap column, Empathy is the aspect that has the largest gap, with a mean value of 2.1803, implying that the performance in terms of Empathy requires more effort to narrow the gap. The study also demonstrates the existence of two more main aspects that require improvement, Reliability and Responsiveness, with mean gaps of 2.0605 and 2.0327, respectively. In terms of Tangibility, the gap is relatively narrower, with a value of 0.6977; meanwhile, Assurance, with a gap of 0.473, suggests that some improvement is required for these aspects. More effort is needed for Reliability, Responsiveness, and Empathy.

Table 5.40 Gap between ESQ and PSQ

	Expected	Perceived	Gap	t (paired)	P value
Tangible	4.4445	3.7468	0.6977	47.177	<0.001
Reliable	4.4221	2.3616	2.0605	45.225	<0.001
Response	4.275	2.2423	2.0327	43.726	<0.001
Assurance	4.2008	3.7277	0.4731	12.117	<0.001
Empathy	4.1885	2.0082	2.1803	48.873	<0.001
Overall	4.2973	2.8197	1.4776	58.949	<0.001

This result supports Hypothesis H5b and rejects H5a as stated in Chapter Three.

5.14 SUMMARY OF HYPOTHESIS TESTING RESULTS

The results of the structural equation analysis by AMOS, CFA, and the paired sample *t*-test have been utilized to test the proposed hypotheses in this study. This section of the chapter provides a detailed discussion and analysis of the hypotheses.

5.14.1 Testing of the Direct Relationships

This stage of the data analysis examines the direct relationships, which include the following hypotheses:

H1₀(null): No significant positive relationship exists between the five sub-dimensions of expected quality (ET, EREL, ERES, EASS, and EEM) and the expected quality primary variable.

H1_A (alternative): A significant positive relationship exists between the five sub-dimensions of expected quality (ETAN, EREL, ERES, EASS, and EEM) and the ESQ primary variable.

H2₀(null): No significant difference exists in the contribution of the expected aspects (ETAN, EREL, ERES, EASS, and EEM) to service quality.

H2_A (alternative): A significant difference exists in the contribution of the expected aspects (ETAN, EREL, ERES, EASS, and EEM) to service quality.

H3₀ (null): No significant positive relationship exists between the sub-dimensions of perceived quality (PT, PREL, PRES, PASS, and PEM) and the perceived quality primary variable.

H3_A(alternative): A significant positive relationship exists between the sub-dimensions of perceived quality (PT, PREL, PRES, PASS, and PEM) and the perceived quality primary variable.

H4₀(null): No significant difference exists in the contribution of the perceived aspects (TAN, REL, RES, ASS, and EM) to service quality

H4_A (alternative): A significant difference exists in the contribution of the perceived aspects (TAN, REL, RES, ASS, and EM) to service quality

H5₀(null):No difference exists between the ESQ and PSQ of the customers.

H5_A(alternative): A difference exists between the ESQ and PSQ of the customers.

H6₀ (null): No significant positive relationship exists between the PSQ and SAT.

H6_A(alternative): A significant positive relationship exists between the PSQ and SAT.

H9₀(null): No significant positive relationship exists between customer awareness and SAT.

H9_A(alternative): A significant positive relationship exists between AWARE and SAT.

H13₀(null): No significant positive relationship exists between the ESQ and SAT (without a mediator).

H13_A(alternative): A significant positive relationship exists between the ESQ and SAT (without a mediator).

Table 5.41: Direct Relationships

	Beta	P	Hypothesis	Assessment
ESQ (significant contribution)		0.001	H1 ₀	Rejected
			H1 _A	Supported
ESQ (differences in strength of contribution)		0.001	H2 ₀	Rejected
			H2 _A	Supported
PSQ (significant contribution)			H3 ₀	Rejected
			H3 _A	Supported
PSQ(differences in strength of contribution)			H4 ₀	Rejected
			H4 _A	Supported
GAP(PSQ, ESQ)	Mean(2.8197, 4.2973)	0.01	H5 ₀	Rejected
			H5 _A	Supported
PSQ -> SAT	0.822*	0.001	H6 ₀	Rejected
			H6 _A	Supported
AWARE -> SAT	0.373*	0.001	H9 ₀	Rejected
			H9 _A	Supported
ESQ -> SAT (Without mediator)	0.432*	0.001	H13 ₀	Rejected
			H13 _A	Supported

5.14.2 Testing of the Moderating Effect

This stage of data analysis deals with the moderating effects of gender and marital status on the relationship between PSQ and AWARE and SAT. This study uses the SEM to examine the moderating effect. The testing of moderating effects includes the following hypotheses:

H7₀(null): No significant positive relationship exists between the PSQ and SAT moderated by the gender of the customer.

H7_A(alternative): A significant positive relationship exists between the PSQ and SAT moderated by the gender of the customer.

H8₀(null): No significant positive relationship exists between the PSQ and SAT moderated by the marital status of the customer.

H8_A(alternative): A significant positive relationship exists between the PSQ and SAT moderated by the marital status of the customer.

H10₀(null): No significant positive relationship exists between AWARE and SAT moderated by the gender of the customer.

H10_A(alternative): A significant positive relationship exists between AWARE and SAT moderated by the gender of the customer.

H11₀(null): No significant positive relationship exists between AWARE and SAT moderated by the marital status of the customer.

H11_A(alternative): A significant positive relationship exists between AWARE and SAT moderated by the marital status of the customer.

Table 5.42: Moderator Relationships by Gender and Marital Status

	P	Hypothesis	Assessment
PSQ -> SAT (moderated by Gender)	0.643	H7 _A	Rejected
		H7 ₀	Supported
PSQ -> SAT(moderated by Marital Status)	0.25	H8 _A	Rejected
		H8 ₀	Supported
AWARE -> SAT (moderated by)	0.643	H10 _A	Rejected

Gender		H10 ₀	Supported
AWARE -> SAT (moderated by	0.25	H11 _A	Rejected
Marital Status		H11 ₀	Supported

5.14.3 Testing of the Indirect Relationships

This stage of data analysis explores into the indirect relationships, which include the following hypotheses:

H12₀ (null): No indirect relationship exists between the ESQ and SAT.

H12_A (alternative): An indirect relationship exists between the ESQ and SAT.

H14₀ (null): No full mediation effect of the PSQ exists on the relationship between the ESQ and SAT.

H14_A (alternative): A full mediation effect of the PSQ exists on the relationship between the ESQ and SAT.

Table 5.43: Indirect Relationships (Mediation)

	Beta	P	Hypothesis	Assessment
ESQ -> PSQ -> SAT	0.506*	0.001	H12 ₀	Reject
			H12 _A	Supported
ESQ -> SAT (Direct with mediator)	-0.074	0.660	H14 ₀	Reject
			H14 _A	Supported

5.15 DISCUSSION OF RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The seven objectives of the study were achieved from answering the research questions, as shown in Table 5.44.

Table 5.44: Research Objectives, Research Questions, and Their Respective Questionnaire Sections

Research objective	Research question	Questionnaire
To study the awareness of Libyan customers of Islamic banking products and services in the Islamic windows in commercial banks	What is the level of awareness of Libyan customers of Islamic banking products and services provided by Islamic windows in commercial banks?	Part (B)
To examine the dimensions of the expected quality of customer service in the Islamic windows in commercial banks	What are the dimensions of the expected quality of customer service in the Islamic windows in commercial banks?	Part(B)
To explore the dimensions of the perceived quality of customer service in the Islamic windows in commercial banks	What are the dimensions of the perceived quality of customer service in the Islamic windows in commercial banks?	Part(C)
To study the difference between expected quality and perceived quality by the customers in the Islamic windows in commercial banks	Do any differences exist between the expected quality and the perceived quality by the customers in the Islamic windows in commercial banks?	Parts(B,C)

To investigate the relationship between perceived service quality and customer satisfaction, moderated by demographic variables such as gender and marital status, in the Islamic windows in commercial banks	What are the relationships between perceived service quality and customer satisfaction, moderated by demographic variables such as gender and marital status in the Islamic windows in commercial banks?	Parts (A, C,D)
To investigate the relationship between customer awareness and customer satisfaction, moderated by demographic variables such as gender and marital status in the Islamic windows in commercial banks	What are the relationships between customer awareness and customer satisfaction, moderated by demographic variables such as gender and marital status in the Islamic windows in commercial banks?	Parts (A, C,E)
To study the relationship between expected service quality and customer satisfaction mediated by perceived service quality in the Islamic windows in commercial banks	What is the relationship between expected service quality and customer satisfaction mediated by perceived service quality in the Islamic windows in commercial banks?	Parts (B, C, D)

5.15.1 Discussion for Research Objective No. 1

Investigation via the descriptive analysis:

“To study the awareness of Libyan customers of Islamic products and services in Islamic windows in commercial banks”

To measure the degree of customers’ awareness of the services and Islamic products offered by commercial banks complying with the Islamic law, the researcher asked six relevant questions in Part E of the questionnaire.

Based on the descriptive analysis in the SPSS program, simple summaries about the sample and about the observations have been made. The customers have higher awareness, accounting for 79% of the total respondents, of Islamic banking services without interest, as shown in Table 5.45. The majority of customers use Islamic banking services (66.7% of total respondents). The major products of Islamic banks include Islamic windows, Mudharabah, Musharakah, Murabahah, and Ijarah financing.

Table 5.45: Customer Awareness of the Services and Islamic Products

Items	Not aware	Aware but not used	Aware and use it
		N (%)	
Services without interest	77(21)	45(12.3)	244(66.7)
Islamic windows	136(37.2)	77(21)	153(41.8)
Mudharabah	205(56)	161(44)	-
Musharakah	202(55.2)	164(44.8)	-
Murabahah	129(35.2)	82(22.4)	155(42.3)
Ijarah financing	294(80.3)	72(19.7)	-

Based on Table 5.45, Murabahah is the product that customers are most aware of, with 64.7% of customers claiming to know about this product and 42.3% of them actually

using it. Meanwhile, Mudharabah and Musharakah are the second major products that customers are aware of, albeit neither of them are actually being used. Finally, Ijarah financing seems to be the product that customers are least aware of, supported by the finding that 80.3% of respondents do not know about this product. This result is consistent with the results of H. Saduman Okumus (2005), Naveed, A.K. and Kashif, R.(2010), Hareem, N.K. and Nadia, A.(2012),and Faisal Karim(2012).

5.15.2 Dimensions of the Expected Quality of Customer Service in the Islamic Windows in Commercial Banks (Discussion for Research Objective No. 2)

Investigation via the CFA:

“To examine the dimensions of the expected quality of customer service in the Islamic windows in commercial banks”

The dimensions of the expected quality of customer service were measured using 22 questions, which were provided in Part B of the questionnaire. The results of the measurement model for the ESQ support Hypotheses **H1_A** and **H2_A** and reject Hypotheses **H1₀** and **H2₀**; the results provide the data for research objective 2. The results confirm that significant positive relationships exist between the five sub-dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) and their corresponding ESQ primary variables, indicating that customers evaluate their perceptions of ESQ by assessing the five sub-dimensions. Moreover, the factor loading values associated with the five first-order factors indicate that Responsiveness (Beta = 0.733) was the strongest indicator of the second-order factor (Expected

Service Quality), followed by Reliability (Beta = 0.698), Assurance (Beta = 0.633), Tangibility (Beta = 0.64), and Empathy (Beta = 0.603).

Responsiveness was the most important indicator in measuring customers' perceptions of ESQ in this study. The result confirms that a significant positive relationship exists between Responsiveness and the ESQ primary variable. This result is consistent with the results of Parasuraman et al. (1988).

The Reliability dimension is the next most important predictor of the ESQ in the current study. The results confirm that a significant positive relationship exists between Reliability and the ESQ primary variable. The results are consistent with the results of Parasuraman et al. (1988).

Assurance is also significantly predictive of the ESQ primary variable in the current study. The results confirm the existence of a significant positive relationship between Assurance and the ESQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Parasuraman et al. (1988).

Tangibility is also significantly predictive of the ESQ primary variable in the current study. The result confirms that a significant positive relationship exists between Tangibility and the ESQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Parasuraman et al. (1988).

Next, Empathy is also significantly predictive of the ESQ primary variable in the current study. The result confirms that a significant positive relationship exists between Empathy and the ESQ primary variable. This result is consistent with the results of the focus group discussions. This result is consistent with the results of Parasuraman et al. (1988).

5.15.3 Dimensions of the Perceived Quality of Customer Service in the Islamic windows in Commercial Banks (Discussion for Research Objective No. 3)

Investigation via the CFA:

“To examine the dimensions of the perceived quality of customer service in the Islamic windows in commercial banks”

The dimensions of the perceived quality of customer service were measured using 22 questions, which were provided in Part C of the questionnaire. The results of the measurement model for PSQ support Hypotheses $H3_A$ and $H4_A$ and reject Hypotheses $H3_0$ and $H4_0$; they also provide the data for research objective 3. The results confirm that significant positive relationships exist between the five sub-dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) and their corresponding PSQ primary variable, indicating that customers evaluate their perceptions of PSQ by assessing the five sub-dimensions. Moreover, the factor loading values associated with the five first-order factors indicate that Responsiveness (Beta = 1.00) was the strongest indicator of the second-order factor (PSQ), followed by Reliability (Beta = 0.731), Empathy (Beta = 0.534), Assurance (Beta = 0.312), and Tangibility (Beta = 0.23).

Responsiveness is the most important indicator in measuring customers' perceptions of PSQ in this study. This result confirms the existence of a significant positive relationship between Responsiveness and the PSQ primary variable. This result is consistent with the results of Riyadh Ladhari (2008) and Muhammad, A.R. et al. (2011).

Reliability is the next most important predictor of the PSQ in the current study. The result confirms that a significant positive relationship exists between Reliability and the PSQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Muhammad, A.R. et al. (2011).

Empathy is also significantly predictive of the ESQ primary variable in the current study. This result confirms the existence of a significant positive relationship between Empathy and the ESQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Riadh Ladhari (2008) and Muhammad, A.R. et al. (2011).

Next, Assurance is also significantly predictive of the ESQ primary variable in the current study. This result confirms the existence of a significant positive relationship between Assurance and the ESQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Muhammad, A.R. et al. (2011).

Tangibility proves to be another predictor of the ESQ primary variable in the current study. The result confirms the existence of a significant positive relationship between Tangibility and the ESQ primary variable. This result is consistent with the results of the focus group discussions and the findings of Muhammad, A.R. et al. (2011).

5.15.4 Difference between Expected Quality and Perceived Quality (Discussion for Research Objective No. 4)

Investigation via a paired sample *t*-test:

“To study the difference between expected quality and perceived quality by the customers in the Islamic windows in commercial banks”

The difference between expected quality and perceived quality was measured using 44 questions, provided in Parts B and C of the questionnaire. The results of the gap analysis between the ESQ and PSQ support Hypothesis **H5_A** and reject Hypothesis **H5₀**; they also satisfy research objective 4. The results confirm that significant differences exist between the five sub-dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy), as shown by the fact that customers' perceptions of the banking industry in Libya were consistently lower than their expectations. The study reveals further that Empathy is the dimension with the largest gap, with a mean value of 2.1803, implying that the performance in terms of Empathy requires improvement. The study also indicates that two more main dimensions demonstrate lower performance and need to be improved: Reliability and Responsiveness, with mean gaps of 2.0605 and 2.0327, respectively. In terms of Tangibility, the gap is relatively narrower, with a value of 0.6977. Assurance, with a gap of 0.473, also requires some improvement. More effort is required for Reliability, Responsiveness, and Empathy, as shown in Table 5.46.

Customers' perceptions of the banking industry in Libya were consistently lower than their expectations. The study makes another revelation that the overall gap is large, with a mean value of 1.4776, indicating that the performance in terms of the overall gap requires improvement. All the dimensions need to be improved from the perspective of customers. These results are consistent with those of Izah, T. and Nor, M.A.B. (2007). These results are also supported by Taraneh et al. (2013) and Asad et al. (2013).

Table 5.46: Gap Analysis between Expected and Perceived Service Quality

	Expected	Perceived	Gap	t (paired)	P value
Tangible	4.4445	3.7468	0.6977	17.177	<0.001
Reliable	4.4221	2.3616	2.0605	45.225	<0.001
Response	4.275	2.2423	2.0327	43.726	<0.001
Assurance	4.2008	3.7277	0.4731	12.117	<0.001
Empathy	4.1885	2.0082	2.1803	48.873	<0.001
Overall	4.2973	2.8197	1.4776	58.949	<0.001

5.15.5 Discussion for Research Objective No.5

Investigation via the SEM:

“To investigate the relationship between perceived service quality and customer satisfaction, moderated by demographic variables such as gender and marital status in the Islamic windows in commercial banks”

The SEM results for measuring the relationships between the PSQ and SAT moderated by demographic variables such as gender and marital status support Hypotheses $H6_A$, $H7_0$ and $H8_0$ and reject $H6_0$, $H7_A$ and $H8_A$, $H9a$. They also answer research objective 5.

The results confirm that a significant positive relationship exists between the PSQ and SAT, implying that the PSQ provides the highest impact toward SAT (0.822).These results are consistent with those of Lee, H.S. (2013), and M.Surachman, D.H., and

Armanu (2013); the results are also supported by Marzouq A. Alqeed (2013); Ojo, O (2010); Naik, C.N.K. et al. (2010); and Muhammad, A.R. et al. (2011).

Conversely, no significant positive relationship exists between the PSQ and SAT moderated by demographic variables such as gender and marital status.

5.15.6 Discussion for Research Objective No. 6

Investigation via the SEM:

“To investigate the relationship between customer awareness and customer satisfaction, moderated by demographic variables such as gender and marital status in the Islamic windows in commercial banks”

The SEM results for measuring the relationships between the AWARE and SAT moderated by demographic variables such as gender and marital status support Hypotheses $H9_A$, $H10_0$, and $H11_0$ and reject $H9_0$, $H10_A$, and $H11_A$. They also answer research objective 6.

The results confirm that a significant positive relationship exists between the AWARE and SAT; the value was 0.373. These results are consistent with those of Lee, H.S. (2013),

Conversely, no significant positive relationship exists between AWARE and SAT moderated by demographic variables such as gender and marital status.

5.15.7 Meditation Relationship (Discussion for Research Objective No. 7)

Investigation via SEM:

“To study the relationship between expected service quality and customer satisfaction mediated by perceived service quality in the Islamic windows in commercial banks”

The SEM results for measuring the relationships between the ESQ and SAT mediated by the PSQ support Hypotheses **H12_A**, **H13_A**, and **H14_A** and reject Hypotheses **H12₀**, **H13₀**, and **H14₀**; they also provide data for research objective 7.

The results confirm the existence of an indirect relationship between the ESQ and SAT. A full mediation effect of the PSQ also exists in the relationship between ESQ and SAT. The mediation effect of PSQ on the relationship between the ESQ and SAT has become insignificantly different from zero (p value > 0.05), implying that the PSQ of consumers fully mediates the relationship between the ESQ and SAT. Thus, the results indicate that the PSQ adequately mediates the model and that the ESQ significantly affects SAT with an indirect relationship. The comparison result excluding the mediating factor suggests that the PSQ as a mediating factor increases the power or explanation.

5.15 CHAPTER SUMMARY

Chapter five covers the data analysis and results from the survey. Two major statistical programs were employed to analyze the collected data in this study. SPSS18.0 was used for descriptive statistics, reliability testing, and normality test, and

AMOS21.0 was used for both the confirmatory factor analysis and full model analysis. The first section of this chapter describes the demographic profiles of the survey respondents. The section also provides a description of the customer awareness of products and services provided by Islamic window banks. The section also provides a descriptive analysis of the service quality (Perceived- Expected) dimensions and normality test results. The second section presents the results of the confirmatory factor analysis conducted to confirm the factor structure of the constructs, and explores the structural equation modeling (SEM), then examines the results of the hypothesis tests by SEM and a paired sample T-test. In this section, the examination of gap analysis between expected and perceived service quality is also reported. The section also presents the results of the hypothesis testing that were performed via the SEM and a paired sample t-test, including the testing of direct relationships, moderating effect, and indirect relationships. Finally, the chapter presents the discussion on how the analyses conducted in the study answer designed research objectives and research questions.