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INFLUENCING FACTORS OF CUSTOMER LOYALTY IN THE MALAYSIAN AIRLINE INDUSTRY USING STRUCTURAL EQUATION MODELLING (SEM)

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ABSTRACT

The airline industry is considered one of the commanding heights of the global economy that facilitates international economic exchanges. Many airline incidents have severely affected the financial and reputation of airline companies. Customers begin to have negative perceptions and lost their trust towards the organizations involved. Therefore, this study was conducted to identify the most influencing factors that contribute to customer loyalty in the airline industry. 301 respondents have been selected randomly to participate in this research. The data was analyzed using Structural Equation Modelling and the results yield that commitment was found to be the most influencing factor for customer loyalty. This research benefits airline organizations specifically. From this research, the organization should have a deeper insight and better understanding of customer loyalty. Hence, this research should be able to aid airline marketers to plan better strategies to increase their revenues and retain or gain the customer.

1.   Introduction

The airline industry is considered one of the commanding heights of the global economy that facilitates international economic exchanges such as world trade, tourism, economic development and global investment among the nation. The airline has long struggled with challenges from external factors such as fluctuations in oil prices, restrictive government regulations, overcapacity, as well as a natural disaster (Rodger, Taplin and Moore, 2015). Moreover, the recent pandemic caused by COVID-19 has globally affected air transport mobility as well as the airline industry in general (Sandro, 2020). Numerous restrictions have been implemented in airline transport, resulting in an enormous impact on the travel industry and the drop in passenger traffic has been significant.

While having to face all these challenges, airlines also face strong competition for customers. The strong competition in the airline market has caused low-cost carriers to exist among airline companies as a strategy to ensure customer retention and loyalty. Practitioners and business scholars have been addressing that customer loyalty is a key strategy for gaining competitive advantages for a firm through the repurchasing of airline services. According to Rodger, Taplin and Moore (2015), customer loyalty means that the customer will repurchase the same brand product or services consistently in the future without being affected by the situation that will cause switching of behaviour.

Due to the competition in the airline industry, airline marketers have started to focus more on customer retention rather than customer acquisition. Doganis (2016) stated that loyal customers help organizations in reducing the cost associated with, attracting the new customers and enhancing the value of the firm. The retention of customers can help organizations to ensure profitability, growth and maintain continuity in a competitive environment by establishing and sustaining brand loyalty (Onomo, 2016). Moreover, recent airline incidents have severely affected the financial and reputation of airline companies. Customers began to have negative perceptions and lost their trust towards the organizations involved. According to Phillip(2005), the prime cost to acquire a new customer is five times more than keeping the old one. Hence, it will be problematic if airlines begin to lose their remaining customers. Therefore, airlines' marketers should know what factors cause customers to be loyal and committed to an airline.

The disasters of MH370, MH17 and QZ8501 in 2014 have caused a huge uproar in Malaysia. The disappearance of MH370 has caused a sharp decline in customer's trust and loyalty towards the airline industry in Malaysia (Ayob & Masron, 2014). The tragedy had severely affected the airline industry in Malaysia as it contributed to the reputational and financial damage of the organizations. The organizations were losing their customers and it took about months for the organizations to recover from the damage done. To increase the revenues and maintain a competitive advantage, companies started to focus more on customer retention and gain their loyalty as a primary strategy. Therefore, this study was concentrated on identifying the most factors that contribute to the customer's loyalty. This research benefits airline organizations specifically, that they would have a deeper insight and better understanding of customer loyalty and the factors involved.

2.   Literature Review

Several studies have been done in the past attempting to understand customer's airline choices. Keynes (2009) stated that perceived value, corporate image and satisfaction are the three elements that best discriminate between customers who are loyal and those who are not.

Johan et al. (2014) also studied factors influencing customer loyalty in the airline industry in Malaysia and found that there is a strong positive relationship between perceived quality and customer loyalty. Moreover, Onomo (2016) found that perceived value, quality of service and satisfaction had a great influence on customer loyalty in Kenya Airways. According to Shrestha (2014), there is a positive significant relationship between customer loyalty and a company's profit and is supported by Xie et al. (2015) which stated that customer loyalty can translate into profit through various ways.

Gunasekara (2015) has conducted a study to find out the factors influencing customer retention on XYZ Airlines. The researcher included the customer' satisfaction as their dimension of the study. Customer satisfaction is one of the factors that contributed to the result of the study. Therefore, it shows that satisfaction is an important factor that may contribute to the customer loyalty in the airline industry. Besides, Johan et al. (2014) also studied factors influencing customer loyalty in the airline industry in Malaysia. From the study, a correlation test has shown that there is a strong positive relationship between perceived quality and customer's loyalty. Furthermore, multiple regression analysis performed showed that perceived quality had the most significant contribution towards customer loyalty.

Trust is an important determinant of a buyer's behaviour in the purchasing process. Trust development generates positive attitudes and customer loyalty (Moreira and Silva, 2015). Chaudhuri and Holbrook (2002) also stated that trust is directly and positively related to behavioural intentions as well as self-reported behaviours. The study was done by Majdid (2013) also confirmed that trust has a significant relationship with customer's loyalty at Bank Rakyat Indonesia. Therefore, to gain further understanding this research studied the factors of customer satisfaction, perceived quality, commitment, and trust that affect customer loyalty in the airline industry. Moreover, this study was also carried out to test the hypotheses that are developed from the research model.

3.   Methodology

3.1   Research Population and Sample

The population in this study comprised of all customers of one airline company in Malaysia while the respondents involved in this study are those who have experienced travelling with the company. The sample size of this study was also as the rule of thumb which had determined that the sample size was larger than 30 and less than 500 as appropriate for most research, and the minimum size of the sample should be 30% of the population (Sekaran, 2003). Besides, the Structural Equation Modelling approach was used in this study, which a sample should preferably be more than 100 for factor analysis to have proceeded (Hair et al.,2010). Thus, 301 observations were recorded in this study.

3.2   Sampling Method

The non-probability sampling method which is the convenience sampling technique was used in this study since the sampling frame was not available. This sampling technique was considered since the population was too large and randomization was impossible (Ilker et al.,2016). The convenience sampling method enabled the data to be collected in a faster and inexpensive way since the respondents were selected based on the convenient accessibility and proximity to researchers. The sample of the study comprised of customers using one of the airline services in Malaysia.

3.3   Data Collection Method

Primary data were used and the data were collected by using an online survey (survey monkey) as a medium to gather information and knowledge from the individuals involved. This method was chosen to be used since it allowed respondents to answer the questionnaires without any interference from other parties. As such, the questions were adapted from two different research on customer loyalty in the airline industry that were done by Onomo (2016) and Chong et al. (2015).

3.4   Research Model

This study consists of one dependent variable which is customer loyalty and four independent variables. The research model for this study is shown in Figure 1. This model shows that customer loyalty can be determined by variables of Satisfaction, Perceived Quality, Commitment and Trust. All independent variables are proposed to have a positive relationship with the dependent variable.
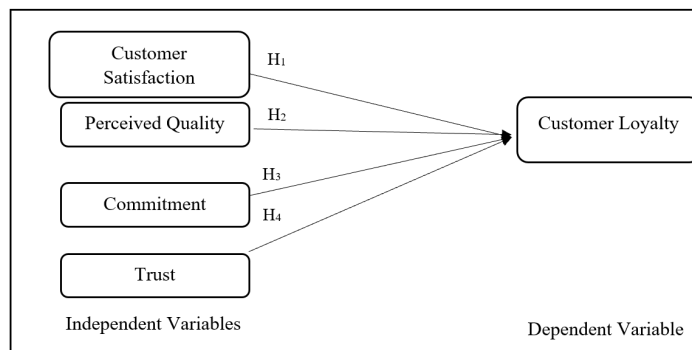
Figure 1: Research Model

3.5   Method of Analysis

3.5.1   Structural Equation Modelling

SPSS was used to perform data entry and statistical analysis. The data obtained were analyzed using Structural Equation Modelling (SEM). Since the 1980s, SEM has developed rapidly, making up statistics methods and becoming an important tool of statistical analysis (Lulu, 2017). Pribanus(2013) used SEM in his study to evaluate the Service Quality, Satisfaction and Customer Loyalty in Hypermart Department Store in Bangkalan, Indonesia. The software used in conducting SEM namely as Analysis of Moment Structure (AMOS) version 23.0. AMOS software was used to explore the statistical relationship among the items of each factor and between factors simultaneously. SEM is a multivariate statistical analysis technique that was used to analyze structural relationships and capable of estimating a series of inter-relationships among latent construct simultaneously since latent construct cannot be measured directly (Awang, 2012). The inter-relationships among variables could be expressed in a series of regression equations. Two types of variables involved in SEM are endogenous variables (customer loyalty) and exogenous variables (satisfaction, perceived quality, commitment and trust).

The purpose of using Structural Equation Modelling (SEM) in this study was to find out most factors that affect customer loyalty. The response variable Y may be related to the regressors, X_1, X_2, X_3 and X_4, so that the model can be written as

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e_i \tag{1}$$

where;

$\hat{Y}$	=	Customer Loyalty
β_0	=	The Constant value (Y-intercept)
$b_{1,2,3,4}$	=	The slope of any corresponding change in one unit of X
X_1	=	Customer Satisfaction
X_2	=	Perceived Quality
X_3	=	Commitment
X_4	=	Trust
e_i	=	The error term

3.5.2 Analysing the Relationship Among Variables in a Model

The advantage of SEM using AMOS graphics is its effectiveness in presenting the correlational relationships and causal effects among the variables(Awang, 2012). The presentation of output is visually informative since it could include the mean and variance for each variable involved in the model. With the value of mean and variance for each variable, the covariance between the two variables will be calculated.
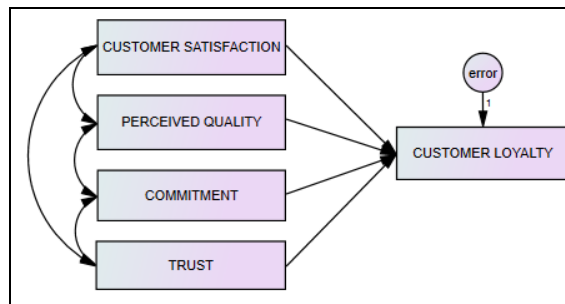
Figure 2: Correlational Effect for The observed Variables

From Figure 2, there are measured variables namely as Customer Satisfaction, Perceived Quality, Commitment and Trust as the independent variables and Customer Loyalty as the dependent variable. The correlational relationships are between Customer Satisfaction and Perceived Quality, between Perceived Quality and Commitment, between Commitment and Trust and between Customer Satisfaction and Trust. The single-headed arrows represent the linear dependencies. The variable error is not directly observed. Error represents much more than random fluctuations in Customer's Loyalty (dependent variable) scores due to measurement error.

4.   Results and Discussion

4.1   The Measurement Model

Figure 3 shows the measurement model for the latent construct measured using a set of items. It shows that the correlation between X1(Customer Satisfaction) and X2(Perceived Quality), X3(Commitment) and X4(Trust), X2(Perceived Quality) and X4(Trust) was 0.93, 0.90 and 0.90 respectively. These correlation values were greater than 0.85 and indicated that the multicollinearity problem exists. Therefore, this problem should be solved before further analysis can be done. In this study, two constructs (Perceived Quality and Satisfaction) were combined into a single construct (items from Perceived Quality were combined with Satisfaction) and one of the constructs (Trust) was dropped from the model to handle the existence of multicollinearity.

Figure 4 shows the measurement model after the multicollinearity problem is solved. Moreover, to have the best fitness index where all the required level is satisfied, Modification Indices were observed. Any pair of items with the highest value of the Modification Index were combined at a time. In this research, the pair of items combined were B6 and B7, B7 and C2, B6 and C2, C4 and C5 which is can be seen in Figure 4.
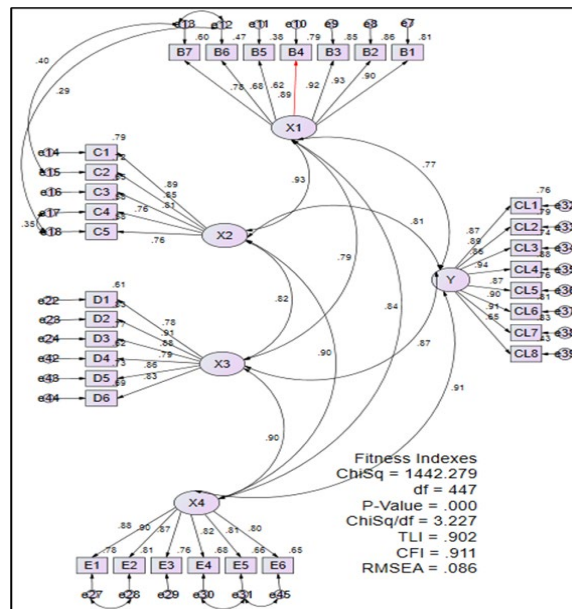
Figure 3: The Measurement Model
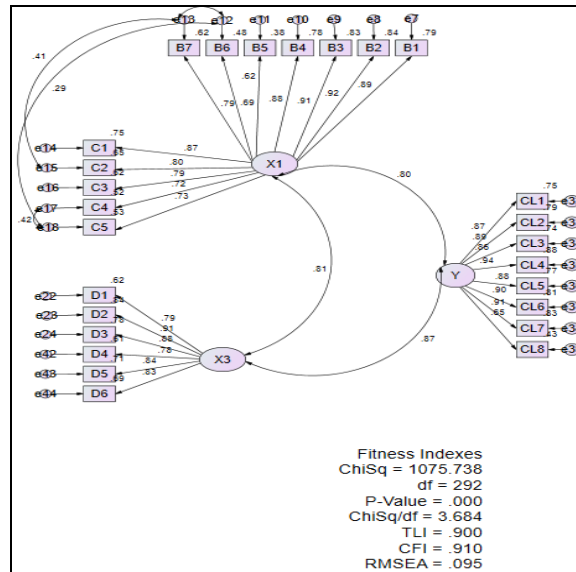
Figure 4: The Measurement Model after Multicollinearity Problem Solved

4.2.1   The Assessment for Validity

The assessment for convergent validity for variables X1, X3 and Y are shown in Table 1. All the values of AVE were greater than 0.5, therefore it can be concluded that the convergent validity was achieved. In addition. Table 2 shows the discriminant validity index summary. The values in the diagonal are the square root of AVE while the off-diagonal value is the correlation between the perspective construct. The most important value in discriminant validity was the value between the independent variable and independent variable. Since the correlation value between variables X1 and X3 was not more than 0.85, it can be concluded that the discriminant validity is achieved.

Table 1:
The Assessment for Convergent Validity

Variable	Average Variance Extracted (AVE)
X_1	0.650
X_3	0.705
Y	0.751

Table 2:
The Discriminant Validity Index Summary

Construct	X_1	X_3	Y
X_1	**0.806**		
X_3	0.81	**0.840**	
Y	0.80	0.87	**0.867**

Table 3:

The Assessment of Fitness for The Measurement Model

Name of category	Name of Index	Index value	Comments
Absolute fit	RMSEA	0.095	The required level is achieved.
Incremental fit	CFI	0.910	The required level is achieved.
Parsimonious fit	Chisq/df	3.684	The required level is achieved.

Table 3 shows the fitness value for the measurement model. Based on this table, the Chi-square Goodness of Fit Test ($\chi 2$ =3.684) showed that the model fits the data well. Meanwhile, other fitness indices which are (CFI= 0.910) that are close to 1 and (RMSEA = 0.095) which is a value ranging between 0.05 and 1. It can be concluded that all the required level was achieved and the model is acceptably good.

4.3   The Assessment for Reliability

Composite reliability is usually used by researchers to measure how reliable the measurement model in measuring the intended latent construct. The result is shown in Table 4. Since the value of Composite reliability of all exogenous variables is greater than 0.6, it can be concluded that the composite reliability was achieved.

Table 4:
The Assessment for Reliability

Variable	Composite reliability (CR)
X_1	0.956
X_3	0.935
Y	0.960

4.4   The Assessment of Normality

The following Table 5 presents the normality assessment for every item in the measurement model. Table 5 indicated that the normality assumption for the new measurement model was achieved since all values of skewness were in between -2 and +2. The assumption was supported by kurtosis values where all values of kurtosis were in between -7 and +7.

Table 5:
The Assessment of Normality Distribution for Item in Respective Construct

Item	Skewness	Kurtosis
B_1	-0.266	-0.356
B_2	-0.386	-0.288
B_3	-0.386	-0.305
B_4	-0.493	-0.300
B_5	-0.412	-0.348
B_6	-0.449	-0.195
B_7	-0.426	-0.281
C_1	-0.355	-0.207
C_2	-0.278	-0.384
C_3	-0.449	0.229
C_4	-0.408	-0.247
C_5	-0.350	-0.390

D_1	-0.305	-0.445
D_2	-0.636	0.182
D_3	-0.603	0.391
D_4	-0.356	0.284
D_5	-0.183	0.057
D_6	-0.400	-0.046
CL_1	-0.521	0.185
CL_2	-0.624	0.676
CL_3	-0.517	-0.370
CL_4	-0.633	0.477
CL_5	-0.476	-0.072
CL_6	-0.455	0.022
CL_7	-0.651	0.527
CL_8	-0.191	-0.813

4.5   The Structural Equation Model
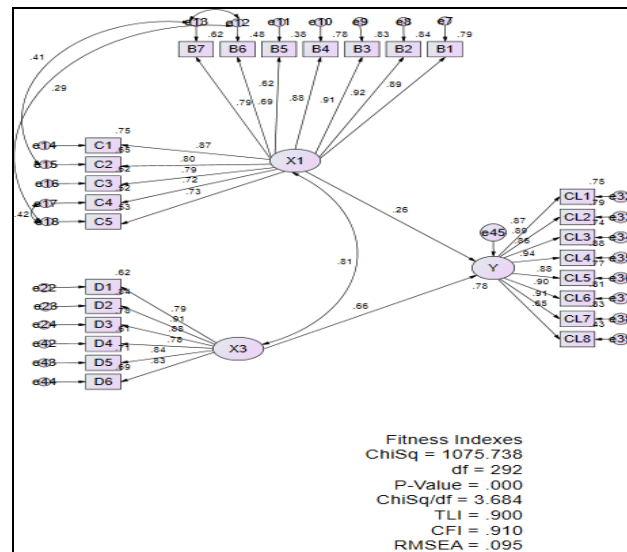
Figure 5: The Structural Equation Model

The structural equation model is shown in Figure 5. It can be seen that the final structural equation model only contained variables Satisfaction and Commitment as the independent variables and all the fitness indexes were satisfied in this finalized model. Moreover, the corresponding fitness indexes and assessments are presented in Table 6. It can be concluded that all the required levels were achieved and the model is acceptable.

Table 6:
The Assessment of Fitness for The Structural Equation Model

Name of category	Name of Index	Index value	Comments
Absolute fit	RMSEA	0.095	The required level is achieved.
Incremental fit	CFI	0.910	The required level is achieved.
Parsimonious fit	Chisq/df	3.684	The required level is achieved.

4.6 Correlation Estimate

The strength of the relationship between two latent exogenous constructs is the measure of correlation. The correlation must be below 0.85 to satisfy the correlation between two exogenous latent constructs. Since the relationship between X1 (Customer's Satisfaction) and X3 (Commitment) was 0.81, it indicates that there is no existence of a multicollinearity problem.

Table 7:
The Assessment of Fitness for The Structural Equation Model

Construct		Construct	Estimate
X_1	< ----- >	X_3	0.81

4.7 The Squared Multiple Correlation

The value of the coefficient of determination R-square was 0.78. This value indicates the contribution of exogenous construct X1 (Customer's Satisfaction) and X3 (Commitment) in estimating the endogenous construct Y (Customer's Loyalty) was 78% whereas the remaining of 22% is contributed by other factors that were not used in this study.

4.8 The Regression Weight

Based on Table 8, it shows that both variables which are X1 (Customer's Satisfaction) and X3 (Commitment) were significant in predicting variable Y (Customer's Loyalty) since the p–values for both latent constructs were less than (a = 0.05). Based on the beta value, it can be concluded that X3 (Commitment) had the most influential factor on Y (Customer Loyalty) since the value of beta for Commitment (b_3 = 0.660) is higher than the value of beta for Customer's Satisfaction (b_1 = 0.263).

Table 8:
The Regression Weight

Path		Path	The Actual Value	Beta	P - Value
Y	<-------	X_1	0.263		0.000
Y	<-------	X_3	0.660		0.000

Table 9:
Summary of The Hypotheses

Hypothesis	Findings
H$_1$: Customer satisfaction significantly affects customer loyalty.	Supported
H$_2$: Perceived quality significantly affects customer loyalty.	Not Supported
H$_3$: Commitment significantly affects customer loyalty.	Supported
H$_4$: Trust significantly affects customer loyalty.	Not Supported

Table 9 shows the summary of the hypotheses in this study. Based on the findings, both X$_1$ (Customer Satisfaction) and X$_3$ (Commitment) had significant factors in predicting customer loyalty. This result was supported by a previous study done by Nadiri et al.(2008), Gunasekara(2015), Chong et al. (2015) and Kasiri et al. (2017).

5.   Conclusion

This study was conducted to find out the most influencing factors (customer satisfaction, perceived quality, commitment and trust) towards customer loyalty in the airline industry. It is shown that variable commitment has the most significant relationship towards customer loyalty. This study should be able to aid airline marketers to plan better strategies to increase their revenues and retain or gain customers. For future studies, the probability sampling technique is recommended so that the results of the analysis can be extended to the population. Moreover, this study can be replicated in the same manner with a larger sample size and more variety of variables affecting the loyalty of a customer in the airline industry.

Acknowledgement

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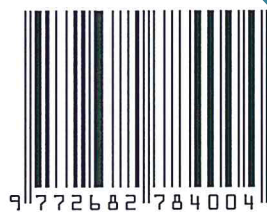
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