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The Association between After-sales Service Quality and Malaysian Car Owner's Satisfaction

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Abstract
To set itself apart from its rivals, the automotive industry's after-sales service is recognised as a crucial success component. The aim of this study is to investigate the association between four service quality dimensions namely responsiveness, empathy, assurance and reliability and customer satisfaction, in this case, Malaysian's car owner's satisfaction. This research is done using quantitative method using online survey that being respond by 400 car owners that own Malaysian national brand cars. The structural model was evaluated using Partial Least Square (PLS-SEM). The analysis indicated that reliability does not affect customer satisfaction, which does not support hypotheses (Reliability$\rightarrow$ Customer Satisfaction: β = 0.116, T =1.910, p > 0.05). The results also indicate that responsiveness, assurance, and empathy positively and significantly affect customer satisfaction. This study suggests to carrying out the future study on customer retention and brand value enhancement.
Keywords: After-Sales Service Quality, Customer Satisfaction, Automotive Industry, PLS-SEM

Introduction
The perception of service quality is essential component of customer experience (Mosimanegape et al., 2020). Offering services solely were not sufficient in current world of intense competition. To provide services, must also provide high-quality service assistance. To maintain and gratify customers to next level, the quality of services given must satisfy the customers.

Customer satisfaction is often the result of the customer's personal experiences in numerous businesses (Teeroovengadum, 2020). The impact of perceived quality on customer satisfaction at various service phases are closely related to the types of services (Cho et al., 2021). Customer satisfaction should be measured across the whole service process, from initial expectation to post-experience evaluation (Pozza et al., 2018).

The post experience has an enormous impact on customer satisfaction, in addition to how clients experience towards the services given. Companies must review and adjust the quality of their clients' service in order to maintain long-term client relationships (Birch-Jensen et al., 2021). The link between after sale service quality dimensions and customer satisfaction have

been done in the context of banking services (Teeroovengadum, 2020; Wu et al., 2019), telecommunication (Abd-Elrahman & Kamal, 2020), insurance industry (Dalla Pozza et al., 2018) and automotive industry (Jain et al., 2019; James et al., 2020).

Automotive industry offers after-sales support to their customers due to automobiles are vulnerable to technical and mechanical difficulties because of long-term use, the automotive industry provides after-sales service to its consumers (James et al., 2020). Car manufacturers provide after-sales services to its customers to keep them satisfied and loyal (Jain et al., 2019). Although the phrase "after-sales service" is commonly used in Malaysia, just a few studies have been conducted in this country (Habidin et al., 2018). Due to this, this study sought to answer the following objectives

- To study the relationship between reliability, responsiveness, assurance, empathy, and customer satisfaction in the after-sales service of the automotive industry.
- To examine the significant association between reliability, responsiveness, assurance, empathy and customer satisfaction in the after-sales service of the automotive industry.

Literature Review

Service quality (SERVQUAL) being suggested to be a crucial factor in determining customer satisfaction and nevertheless it has already been used in a variety of service industries such as telecommunications (Abd-Elrahman & Kamal, 2020), banking (Khanduri, 2021; Teeroovengadum, 2020; Wu et al., 2019), insurance (Pozza et al., 2018), tourism (Souki et al., 2019) and automotive (Gandhi et al., 2018; Jain et al., 2019; James et al., 2020; Simanjuntak et al., 2020). Previous research had been focusing on automotive industry (Gandhi et al., 2018; Jain et al., 2019; James et al., 2020) but not in Malaysia (Habib & Sarwar, 2021).

J.D. Power's 2019 Malaysia Customer Care Index (CSI) analyses overall automobile owner satisfaction with after-sales services (Lye, 2019). As reported in the survey, those whose company at the top of the ranking were the international car brands. The Malaysian national car brands are at seventh and eighth place. The national car brands are expected to become more competitive and innovative than ever before considering globalisation and the challenges it faces today and, in the future, as well as to meet the demands of the automotive industry. As a result, it is critical to assess national car brand's service quality and corporate image. This study will help national car brand to understand this scenario and take appropriate steps to maintain after-sales service quality and customer satisfaction. The purpose of this research was to see if there is an association between after-sales service quality and Malaysian car owner's satisfaction.

Service quality (SERVQUAL)

Five dimensions of the quality of service model, which are tangibility, reliability, responsiveness, assurance, and empathy is also the size of the service performance model and compared to a car service center (Chen et al., 2018), which are reliability, responsiveness, assurance, and empathy

Relationship between Reliability and Customer Satisfaction

The ability and commitment of services provider to provide services in accordance with the agreement is referred to as the reliability dimension. The decision was made in response to a desire to tailor performance to customer expectations, which entails providing the same service to all customers on time (Jain et al., 2019). Obtaining a service from a reputable service provider extends the life of the vehicle and keeps it from falling unexpectedly (James et al., 2020).

H1   There is a significant relationship between reliability and customer satisfaction in the after-sales service of the automotive industry.

Relationship between responsiveness and customer satisfaction

When a service provider serves customers, customers will positively evaluate the service provider's ability to meet the owner's demand for capacity creation. This dimension focuses on stigma and speed with client issues, requests, questions, and complaints (Chaichinarat et al., 2018), and it has been demonstrated in previous research in automotive industry (James et al., 2020). In the case of a car after-sales services, this refers to weekly changes in service hours for weekend and night services because of changing customer needs. Employee motivation to solve client problems when using services has a positive effect on customer satisfaction (Jain et al., 2019).

H2   There is a significant relationship between responsiveness and customer satisfaction in the after-sales service of the automotive industry.

Relationship between assurance and customer satisfaction

Assurance is an important component of service quality that influences customer satisfaction (Chen et al., 2018), and it has also been stated that customers can be reassured by the knowledge process acquired by service provider to perform the conditions preferably during service delivery. Customers can be assured if they can trust the service provider's recommendations, believing that the car service is well prepared and will not cause any damage to the car. This dimension becomes important when customers are unsure about the service provided by a specific car authorization (Jain et al., 2019).

H3   There is a significant relationship between assurance and customer satisfaction in the after-sales service of the automotive industry.

Relationship between empathy and customer satisfaction

Customers will remain dissatisfied with the quality of service if empathy is not present, according to (Wu et al., 2019); thus, empathy has a significant impact on customer satisfaction (Chen et al., 2018). Here, the customer is made to feel important to the organisation and that his or her needs are important to the organisation, as the customer is given special, individualised attention(Jain et al., 2019).

H4   There is a significant relationship between empathy and customer satisfaction in the after-sales service of the automotive industry.

Methodology

Research Design

The quantitative research design is used to describe the after-sale service quality dimensions that lead to customer satisfaction.

Population and Sampling

The target population is made up of 50,200 people. The sampling technique is probability sampling with a simple random sampling method, and the sample size was determined using the Krejcie and Morgan (1970); Morgan (2012) table, which concludes that 381 samples are required.

Sampling Procedure and Data Collection Procedure

The population of national brand car owners was first determined before sampling. The database was taken from "National Brand Car User Community" group on Facebook. All members must first be confirmed to be national brand car owners before they can participate in this survey. The questionnaires in the survey included 26 questions from section A about their perceptions of service quality dimensions and six questions from section B about their level of satisfaction with after-sales customer service. Section C follows, with eight questions about demographics such as gender, age, income, occupation, years of using the services, and frequency of visiting after-sales services. In section A and B, Likert scale is used to confirm respondents' level of agreement with the surveyed dimension details.

Research Instruments and Measurement Variables

The researchers are using the survey method and solely using the digital type by using Google survey form to reach out to the targeted population. The owner's demographic information is classified according to gender, age, income, occupation, years of using the services, and frequency of visiting after-sales services. A structured questionnaire with four independent variable dimensions and one dependent variable dimension was created.

Data Analysis and Result

The suggested method of Ringle et al (2005), SmartPLS, was used to test the proposed model. Both the measurement model and the structural model analysis are done in the PLS model. The structural model entails testing hypotheses, the interpreted variance, and the predictive significance of the model, whereas the measurement model includes assessing the model's reliability and validity (Q2).

In this study, the measurement model's factor loadings, reliability, and validity were assessed. According to Hair et al (2011), the factor loading value for each item should be ≥ 0.70. According to Nunnally and Bernstein (1994), reliability is attained when Cronbach's Aplha (α) and Composite Reliability (CR) values are ≥ 0.70. Convergent and discriminant validity were also used to evaluate the construct validity. The average variance extracted (AVE) for each construct, which should be ≥ 0.50 Hair et al (2011), can be used to determine whether a construct has convergent validity. However, the AVE's square root values must be bigger than the corresponding correlations of all components to achieve discriminating validity (Fornell and Larcker, 1981), which means that the indices are related to their factors greater than others. All criteria (loadings, reliability, and validity) were fulfilled, as can be shown in Tables 1 and 2, which supports the measurement model.

Table 1
Construct reliability and validity.

Construct	Items	Loadings	Cronbach's Alpha	CR	AVE
Assurance (Asu)	A1	0.830	0.764	0.864	0.679
	A2	0.835			
	A3	0.807			
Empathy (Emp)	E1	0.773	0.704	0.819	0.531
	E3	0.680			
	E4	0.709			
	E5	0.751			
Reliability (Rel)	R1	0.759	0.752	0.843	0.574
	R2	0.766			
	R4	0.675			
	R5	0.824			
Responsive (Res)	Rs1	0.780	0.853	0.895	0.630
	Rs2	0.811			
	Rs3	0.808			
	Rs4	0.768			
	Rs5	0.800			
Customer Satisfaction (CS)	CS1	0.791	0.717	0.824	0.540
	CS3	0.739			
	CS5	0.710			
	CS6	0.695			

Table 2
Analysis of discriminant validity

	Asu	CS	Emp	Rel	Res
Asu	**0.824**				
CS	0.679	**0.735**			
Emp	0.594	0.704	**0.729**		
Rel	0.727	0.675	0.584	**0.814**	
Res	0.798	0.721	0.641	0.758	**0.794**

Note: AVE's square root is shown in bold

This study tested the validity of the hypotheses and predictive relevance of the proposed model by using bootstrapping with 500 sub-samples and the blindfolding method. The path coefficients (β) values, t-statistics, p-values were employed to identify whether the links between constructs in the model (Assurance, Empathy, Reliability, Responsive and Customer Satisfaction) are statistically significant (i.e., at $p < 0.05$, $p < 0.01$, or $p < 0.001$). Table 3 includes the results of hypotheses testing. R^2 indicates the percentage of variance in the dependent variable that is interpreted by the independent variables. Where R2 must greater than 0.10 to be substantial as suggested by (Falk and Miller, 1992). The R^2 for customer satisfaction is 0.651 means that 615.1% total variation in customer satisfaction can be explained by Assurance, Empathy, Reliability, and Responsiveness.

Table 3
Structural model

Hypothesis	Path	β	Mean	Std Dev	T Stat	P Values	f^2	Effect size	Result
H1	Rel -> CS	0.116	0.116	0.061	1.91	0.057	0.018	small	Not supported
H2	Res -> CS	0.308	0.304	0.071	4.324	0.001	0.206	medium	Supported
H3	Asu-> CS	0.137	0.137	0.055	2.52	0.012	0.012	small	Supported
H4	Emp-> CS	0.357	0.361	0.041	8.737	0.001	0.063	small	Supported
	R^2	Q^2							
Customer Satisfaction	0.651	0.239							
Assurance		0.353							
Empathy		0.226							
Reliability		0.297							
Responsive		0.440							

Recommended: t-values > 1.96.
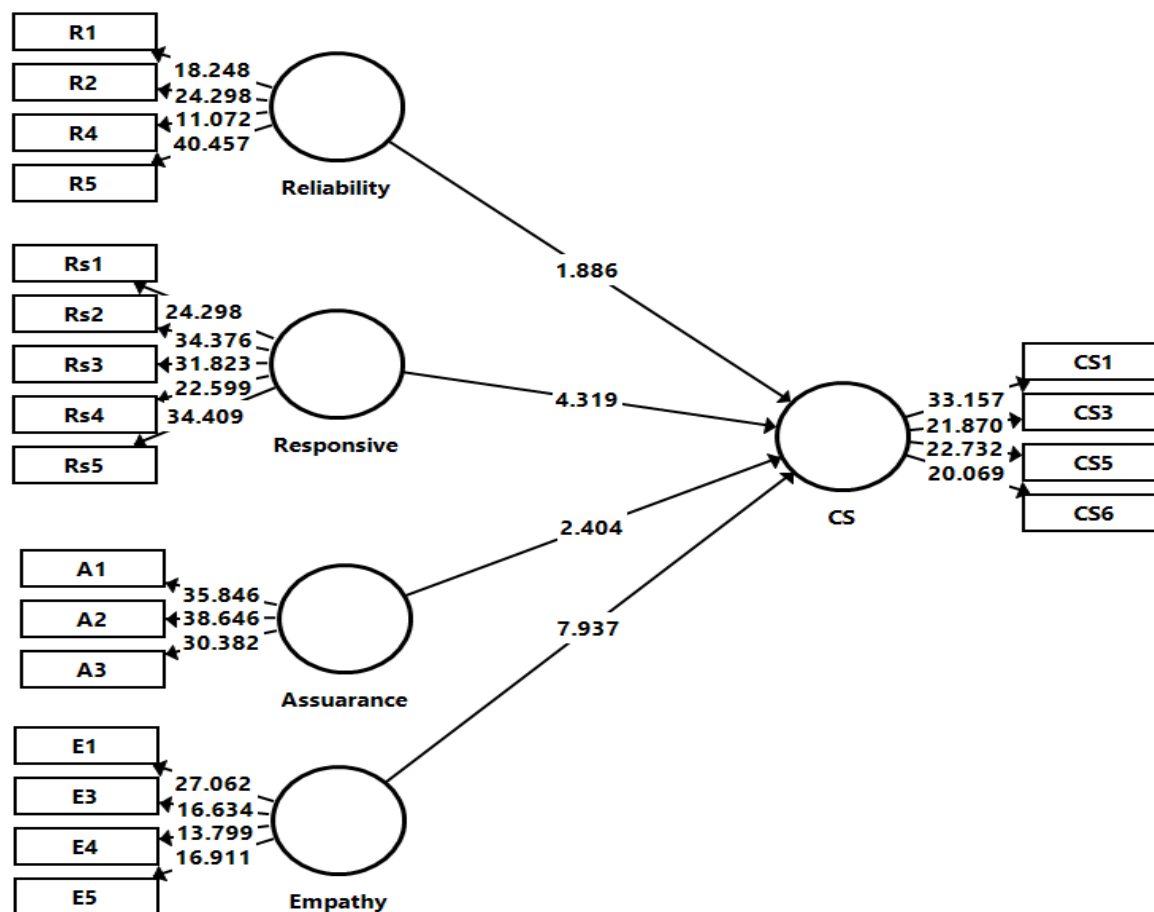Notes: ***p < 0.001; **p < 0.01; *p < 0.05.

Figure 1 Structural Model

Furthermore, in addition to R2, f2 analysis has been used to quantify the magnitude of the effect size for the latent variables on the dependent variable (Chin, 2009). The Values of f2 (between 0.02 and 0.15, from 0.15 to 0.35, and above 0.35 respectively) were used to show the effect sizes of the predictive variable (small, medium, and large), as per Cohen (2013), the p-value can only reveal the existence of the impact and not the effect size. Table 3 shows all f2 results as per the sizes of the effect: three relationships (small) and one relationship (medium). The predictive quality Q^2 was evaluated using the blindfolding method in SmartPLS 3. The resulting Q^2 values indicate that the model has a proper predictive quality given all the Q^2 values are above 0.000 as suggested by (Hair et al., 2011).

In addition, the hypotheses test results indicated in Table 3 reveal that Rel does not affect CS, where (β = 0.116, T =1.910, p > 0.05), which does not support H1. The results also indicate that Res, Asu and Emp positively and significantly affects CS (β = 0.308, T =4.324, p < .001; β = 0.137, T = 2.520, p < .05; β = 0.357, T =8.737, p < .001). Thus, H2, H3, and H4 were supported. The responsiveness to be found the most significant among variables studied and have bigger effect than other variables based on structural model. This means responsiveness from local service provider is very responsive in term of dealing and settling issues with their customers.

Conclusion
The findings of this study found that responsiveness, assurance, and empathy have significant influence toward customers satisfaction on after sales service quality from local service

provider. This led to the implication for local car service providers that they need to focus strengthening on these aspects as keys to improve they're after sales services to be better. As stated by (Chaichinarat et al., 2018) the dimension of responsiveness measured on stigma and speed with customer services tasks. Unfortunately, reliability toward customer satisfaction found not significant at 5% level of significance. The study suggests to studies for customer retention and brand value enhancement which could be future variables in this area of study. Furthermore, the future study should focus on other car's producer to have better knowledge and understanding about automotive industry.

This study found most significant variable is empathy has robust relationship between Malaysia's car owner satisfaction that provided by Malaysian car brand service provider. This research helps to understand the existing theory of the mechanisms that accelerate car's owner satisfactions in Malaysia. This knowledge can be used by car service centre manager to develop and implement effective empowerment strategies. Thereby, the research help managers to shape the best practices and improving customer experience in automotive industry, which can lead to higher levels of customer satisfaction and in retaining their customer.

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