An Analysis of Customer Satisfaction for Bus Air Conditioning Service Centers by Multiple Linear Regression

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ABSTRACT

The goal of this study was to determine the factors that influence customer satisfaction in bus air conditioning service centers (i.e., Denso's official representative service centers in Thailand) in order to understand the true needs of customers. This was done by collecting data from 100 questionnaires in which the questions were mainly focused on satisfaction. We were interested in factors such as satisfaction, repair quality, reasonable price, repeat purchase, repair time, and location. Multiple linear regressions were used as a statistical tool to perform a stepwise analysis to eliminate the factors that had no effect and to obtain the satisfaction equation (SAT): SAT = 0.585 + 0.465 (RP) + 0.249 (LT) + 0.169 (L), meaning that 46.5% of those surveyed intended to make a repeat purchase. Furthermore, the F-test value from the ANOVA analysis was 34.675. This demonstrated that all three variables had a significant impact on satisfaction and explains why the regression equations developed are appropriate and correct.

Keyword: Customer satisfaction, Multiple linear regression, Repeat purchase, Repair lead time, Location.

1. INTRODUCTION

The definition of "customer satisfaction" comes from a variety of perspectives, which is understood by many marketers. Customer satisfaction is defined as the key to achieving goals in the service environment, and it involves exceeding the needs and demands of customers [1]. The better the customer satisfaction, the greater the benefits for the company, as customers will repurchase a company's product, and vice versa [2]. Customer expectations serve as the foundation for satisfaction. When customers are provided with services or products that exceed their expectations, they accept the quality of service as a result of this. It is the foundation of all business. Customers who bring their buses in for service would expect a high-standard service center, rather than a general repair shop. Customers who are willing to pay a higher price must receive a higher level of service in terms of quality, lead time, and employee response, as well as the convenience of using the service shop. Service centers are capable of providing services that meet or exceed expectations, resulting in an implicit satisfaction at the end. Hansemark and Albinson [3] define customer satisfaction as a general customer attitude towards a service provider, or an emotional response to the difference between what customers expect and what they receive, in terms of the fulfillment of

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certain needs, goals, or desires. It could be said that customer satisfaction is what a customer feels after learning or experiencing a company's ability to meet their expectations. Satisfaction regarding goods/services greatly influences the intention to revisit, and if the degree of satisfaction rises, the likelihood of retaining the existing customer is more likely to increase [4]. To create satisfaction in service, especially for the drivers who bring their buses to the service center, several factors must be considered. For example, the repair lead time is critical because if the technician takes too long to repair the vehicle, the waiting driver may become frustrated. The reason for this is that having a bus in for repairs means that it is unable to pick up passengers, which affects the fare collection revenue, resulting in dissatisfaction with the service. On the other hand, repair prices may not be a factor that drives satisfaction as the drivers do not pay for the repairs themselves. Customers who are satisfied are more likely to return to those who supported them, while dissatisfied customers will go elsewhere [5] meaning that the key factor for customer's satisfaction is knowing the customer's expectation about a certain product. Customer satisfaction is the maximum percentage of customers using a certain product who perceive its quality, and hence they are happy and satisfied. We look at product quality using an aggregate measure of satisfaction known as market-level product satisfaction in the marketing literature. Service quality, on the other hand, was assessed at the dealer facility using an individual satisfaction measure of service delivery. Both of these variables were utilized to determine customer loyalty [6]. Transaction-specific customer satisfaction refers to an evaluation of a specific purchase transaction, while cumulative customer satisfaction represents an evaluation based on the total purchase and usage of goods or services over time [7]. As a result, in order to ensure the long-term viability of the bus air conditioning repair business, we must try to understand the true needs of all customer groups. Customer satisfaction is the key to profitability as satisfied customers will eventually become loyal customers.

The automotive air conditioning repair business is highly competitive and has been especially so during the COVID-19 outbreak, causing problems in the public bus industry and inevitably affecting the amount of air conditioning repair work that is carried out. The travel restrictions brought on by the COVID-19 pandemic resulted in an estimated 20 thousand international tourists visiting Thailand in the first quarter of 2021 only [8]. A study of the factors that influence customer satisfaction is critical in order to improve the competitiveness of service centers after the COVID-19 pandemic has passed. As can be seen, there are numerous factors that influence satisfaction, such as service quality, repair time, reasonable price, and location, with the assumption that if the company thoroughly understands customer satisfaction, it can clearly design services to meet the needs of customers. In the following step, primary information was obtained from satisfaction surveys that were conducted by handing out questionnaires to customers who brought their vehicles to service centers. The essential idea is to satisfy customers so that they continue patronizing a business, thus enabling the business to increase its profit and be sustainable in the industry [9]. Revenue from repeat customer service is driven by customer satisfaction. As a result, a company must concentrate on the process of creating customer satisfaction.

After sales service is a term used to describe the services provided to a product's customer during the product's life cycle after it has been acquired [10]. Companies

can improve their service in order to make customers happy and eliminate unpleasant customer experiences [11]. Customer satisfaction is the level of fulfillment a person feels after comparing a performance or results with expectations [12]. Understanding the needs, wants, and demands of customers provides the input for institutions to design marketing strategies in order to create satisfaction with the company [13]. After-sales service satisfaction measurement is an effective management tool for understanding the true needs of customers across all dimensions. Building a concrete framework of appropriate services fostering loyalty leads to business sustainability. When researching the factors that influence customer satisfaction, it is possible to narrow the gap between the company and the customer, which is regarded as something that the company must prioritize. To elevate service above that of the competitors, working proactively in accordance with the factors investigated is recommended.

Do you wonder if customer satisfaction surveys are still useful after several years of use? What approaches should be used to ensure that data from customer satisfaction surveys is used more effectively?[14]. According to[15]. Customer happiness has become the fundamental to success for hospitality businesses. After-market automobiles as a result any business should not overlook the significance of customer satisfaction. It's also critical to keep track of the aspects and variables that influence customer happiness, and to attempt to raise customer expectations for these factors and variables in order to increase customer loyalty.

Another factor to consider is the repeat purchase or service of air conditioners, because when bus air conditioners breakdown, what factors influence customers' decisions to be using in our services? That is why we must investigate the significant factors influencing repeat purchases. Aside from satisfaction, there are other factors to consider. It has been recognized that the most valuable customers are those who return and become repeat buyers [16]. In return, repeat buyers are more likely to use word-of-mouth and spend more (e.g., an increase in margins and cross-sales), while the costs of retention decrease over time [17].

The quality of service can lead to customer satisfaction where there is an under-standing and improvement of operational processes, and also the identification of any problems. To develop reliable and accurate service performance measures, customer satisfaction and other performance outcomes must also be measured. Service quality is essential in measuring customer satisfaction and it is one of the most important aspects of business operations [18]. Paying attention and striving to improve the quality of repair work, as well as assisting customers to be satisfied, will also assist the service center to save money on low-quality tasks, representing a significant reduction in operating costs. Finally, consider the value that customers derive from quality, as they will pass on that satisfaction and recommend the service to others. Many organizations strive to establish service quality standards. Investing in high-tech tools, staff development through the provision of training, using Internet of Thing to identify root causes of issues, reducing waiting times, service process monitoring, and always attempting to find solutions are all activities that contribute to an increase in the quality of repair work.

Repeat purchases are an important goal that every business aims for from its customers, and results from product or service satisfaction and loyalty. Retaining loyal customers is less expensive than acquiring new customers. Service centers

must try to find a way to establish strong and stable relationships with existing customers who have the potential for repeat purchases. According to a study, service quality judgments are influenced by price expectations. especially in the event of a loss price, such as when the actual selling price exceeds the predicted price [19]. However, there are risks to keeping these customers. If this group of customers is dissatisfied, the aim must be to impress them more in order to secure a repeat purchase. Customer needs can easily be met by determining their true needs. A consumer typically decides to undergo a repeat purchase when he/she is normally satisfied with the brand and is in the last stage of post-purchase behavior in the consumer buying process [20] In order to generate repeat purchases in the future, service centers must strive to maintain quality work while remaining professional in their industry.

This is the first time that a study has been conducted on the maintenance system of air conditioners used in large buses, and the results of the study and analysis could be used to further expand the study in the future.

2. MATERIALS AND METHODS

The questionnaire was used to collect primary data from customers who expressed their opinions. This was the starting point for this research to determine the goal of creating effective services. We chose multiple linear regression as the specific tool for this analysis from among the most widely used statistical tools in research to investigate the impact of various factors on customer satisfaction.

2.1 Research concept

The relationship among all of the factors of interest to us will be linked together in this research to identify a point at which we can examine the effect of the dependent variables, which is the hypothesis that we are most interested in. The data from the questionnaires was used as input in a multiple regression equation, as shown in Figure 1.

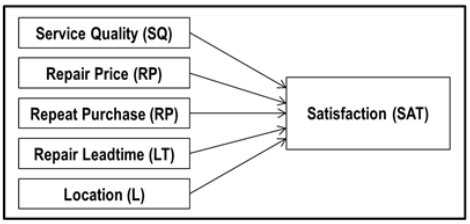

Figure 1. Research framework.

Service quality, lead time, price, location, and repeat purchase are all independent variables, with satisfaction as the dependent variable. The research workflow began with the creation of a questionnaire. The customers who took the buses to be repaired were analyzed as respondents, and the important factors affecting satisfaction were derived as the result**.**

2.2 Basic Service Center Information

Sahamontol Solutions (Thailand) Co. Ltd. is a Denso bus air conditioner distributor in charge of providing comprehensive air conditioning system repair services for bus air conditioners, truck refrigerators, and air conditioners in passenger cars. The workshop is located near a large bus station, and there are numerous public buses in the area. It is also close to Tarad-Thai, which is a wholesale market of fresh fruits, vegetables, and frozen food and the source of a large number of refrigerated trucks. As a result, Denso is well known in the public bus and commercial transportation industries.

According to Figure 2, the service center's current service activities include repair following installation and delivery to the customer. It is a thorough service that

includes maintenance, replacement of defective parts, and cleanup. Both work within and outside of the warranty period. Customers will look for alternatives to maintain air conditioners after the warranty period has expired in order to save money. For example, shifting to general garage services, etc., despite the fact that the repair center will strive to reach customers through a variety of techniques even with a preventative maintenance (Pre-failure) program, it is unable to provide a service that fulfills the needs of each customer segment.

(a) Bus Air conditioner repaired.

(b) Condensing unit cleaning up.

(c) Special tools.

Figure 2. Details of service activities

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2.3 Questionnaire Preparation

The questionnaire used in this study was divided into two sections. The first section contained questions regarding the respondents' basic information and consisted of seven questions. The second section inquired about the level of customer satisfaction. The questionnaire used a Likert scale of 1–5: 1=Disagree entirely, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly agree. The details of the questions regarding the level of satisfaction for each factor are shown in Table 1.

2.4 Data collection

2.4.1 Research population

We collected data via an online questionnaire from customers who brought their vehicles to the service center for air conditioning check and repairs, and these questionnaires were collected over the course of approximately one month.

2.4.2 Research samples

Service center employees completed a total of 100 questionnaires by conducting interviews with the customers who arrived to pick up their buses. In the case of private vehicles, the owners were interviewed. In the case of company vehicles, interviews with the officers in charge of driving those vehicles were conducted.

The sampling formula was chosen based on the formula [20] which was derived as the equation below.

$$n = \frac{Z^2}{4(Moe)^2}$$

Information:
n = Number of samples
Z = Normal distribution level at level of 5% = 1.96%
Moe = Margin of Error or maximum error rate is 10%

As a consequence of the calculation, the following sampling results are obtained:

$$n = \frac{1.96^2}{4(0.10)^2} = 96.04$$

As a result, the sample group will be 100 respondents who will fill out an online questionnaire using the Google Forms questionnaire builder.

Table 1. Details of questionnaire.

Factors	Questionnaire
Service Quality	Your satisfaction: in terms of repair skills or craftsmanship/quality of repair work
Lead Time	Your satisfaction: in terms of the time it takes to repair
Price	Your satisfaction: in terms of the appropriateness of the repair price
Location	Your satisfaction: in terms of location of the service center
Satisfaction	Your satisfaction: in terms of overview of all services in the service center
Repeat Purchase	If you have to come back to repair your car's air conditioning system again, please give us the weight level for returning to our service center again

2.5 Data analysis

To analyze the data, we used IBM SPSS V.21 descriptive statistics to describe the characteristics of the respondents, which are classified according to five factors: gender, occupation, education, age, and income. Following that, multiple linear regressions were used as a tool to forecast the factors influencing satisfaction based on the forecast coefficient and whether any factors explain the variation in the dependent variable. There was also a statistical test to determine the questionnaire's confidence.

2.5.1 Reliability test for research confidence

The questionnaire's reliability test was successful. Cronbach's alpha is a popular method for determining an item's internal consistency [21]. According to this test, the value of an alpha coefficient greater than 0.60 indicates a reliable model for the survey results for the population under study [22]. The decision-making of a construct or variable is said to be reliable based on 40 respondents. If the Cronbach's alpha (α) value is greater than 0.60, the questionnaire is considered to be reliable. If

Cronbach's alpha (α) is less than 0.60, the questionnaire used is not reliable.

Table 2. Reliability test

Cronbach's Alpha (α)	Description
0.836	Reliable

The results and factors are important in all questions. Here, Cronbach's alpha (α) is 0.836, which is greater than the recommended value of 0.6, and indicates that the questionnaire's factors are reliable. This also shows that the equations generated are reasonable and correct based on the results of this reliability test.

3. RESULTS AND DISCUSSION

3.1 Results

3.1.1 Characteristics of respondents

We can explain that the characteristics of the 100 respondents who came to use the service in the service center are shown in Table 2. The majority of customers were men, 76 (76%), and there were 24 women (24%). A total of 63 respondents (63%) were working in the private sector, 25 were business owners (25%), and 12 were government employees (12%). Regarding education, 36 respondents were educated below a bachelor's degree (36%), 37 had a bachelor's degree (37%), and 27 had higher than bachelor's degree (27%). In terms of age, the majority of respondents (46 people) were aged between 41 and 60 years old, while the income range of 41 respondents (41%) was THB 15,000 - 40,000.

Table 3. Characteristics of respondents.

Characteristic		Percentage
Gender	Female	24
	Male	76
	Total	100
Occupation	Business owner	25
	Government employee	12
	Private sector	63
	Total	100
Education	Below bachelor's degree	36
	Bachelor's degree	37
	Higher than bachelor's degree	27
	Total	100
Age	< 25	1
	25 – 40	50
	41 – 60	46
	> 60	3
	Total	100
Income	15,000 – 40,000	41
	40,001 – 60,000	31
	> 60,001	28
	Total	100

3.1.2 Multiple linear regressions

The analysis was based on studying all the selected factors that were predicated on the initial concept before creating the regression equation, which is a concept that can be represented as a factor relationship diagram.

According to Table 4, As a result, in order to generate multiple linear regression equations, we employed a stepwise method of selecting factors into the equation, with the first factor being correlated with a high-level dependent variable. For this we had three inputs, namely repeat purchase, repair lead time, and location, with two factors, service quality and repair price, removed.

To see how this could be used, we conducted an analysis of variance. Can the equation's independent variables predict the dependent variable? Table 4 shows that the three models were all significantly < 0.05, indicating that all independent variables had a significant impact on the dependent variable.

Table 4. Factors selected using stepwise.

Model	Variables entered	Variables removed	Method
1	Repeat purchase (RP)	-	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100).
2	Repair kead time (LT)	-	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100).
3	Location (L)	-	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100).

3.1.3 Re-evaluation of service quality (SQ) and repair price (P)

Based on the stepwise results, we can determine which factors influence satisfaction and which do not, which in this case refers to service quality and repair price being cut. We concluded that it had no effect on satisfaction because the p-value of Service quality and repair price was > 0.05. As a result, both factors were removed from the experiment. So, therefore, we combined factors for further investigation by employing multiple regression equations with other variables. Table 5 represents a grouping to study such factors. To consider the final model (Model 3), we can conclude the following.

Table 5. Dimension variable summary of multiple linear regression analyses.

Variable	B	Beta	*t*-value	*p*-value
Repeat purchase (RP)	0.465	0.430	4.917	< 0.05
Repair lead time (LT	0.249	0.252	3.238	< 0.05
Location (L)	0.169	0.215	2.471	< 0.05
Constant	0.585		1.541	0.127

As a result, Table 5 shows that we can write the regression equation as follows: Satisfaction (SAT) = 0.585 + 0.465 Repeat Purchase (RP) + 0.249 Repair Lead Time (LT) + 0.169 Location (L).

The value F = 34.765, Sig < 0.001 for Model 3 was obtained from the ANOVA (Table 6), which means that the form of the generated equation is correct, even though all three variables had a significant positive impact on the dependent variable.

Table 6. Analysis of variance **(**ANOVA) test.

ANOVA [a]						
	Model	**SS**	**DF**	**MS**	***F*-value**	***p*-value**
1	Regression	14.260	1	14.260	70.406	< 0.001 [b]
	Residual	19.850	98	0.203		
	Total	34.110	99			
2	Regression	16.722	2	8.361	46.641	< 0.001 [c]
	Residual	17.388	97	0.179		
	Total	34.110	99			
3	Regression	17.671	3	5.920	34.765	< 0.001 [d]
	Residual	16.349	96	0.170		
	Total	34.110	99			

[a] Dependent variable: Satisfaction (SAT).
[b] Predictors: (Constant), Repeat purchase.
[c] Predictors: (Constant), Repeat purchase, Repair Lead time.
[d] Predictors: (Constant), Repeat purchase, Repair Lead time, Location.

Each independent variable's regression coefficient (T-test) was examined. Unstandardized coefficients are the raw scores for each independent variable that describe the effect or influence on the dependent variable, as shown in the Table 7.

Table 7. Details of coefficients.

Coefficients [a]						
	Model	**Unstandardized Coefficients**		**Standardized Coefficients**	***t*-value**	***p*-value**
		B	**Std. Error**	**Beta**		
1	Constant	1.355	0.357		3.791	0.000
	Repeat Purchase (RP)	0.698	0.083	0.647	8.391	0.000
2	Constant	0.631	0.389		1.624	0.108
	Repeat Purchase (RP)	0.579	0.085	0.536	6.832	0.000
	Repair Lead Time (LT)	0.287	0.077	0.291	3.705	0.000
3	Constant	0.585	0.379		1.541	0.127
	Repeat Purchase (RP)	0.465	0.095	0.430	4.917	0.000
	Repair Lead Time (LT)	0.249	0.077	0.252	3.238	0.002
	Location (L)	0.169	0.068	0.215	2.471	0.015

[a] Dependent variable: Satisfaction (SAT).

Referring to Table 7, we can see that repeat purchase had a significant effect on satisfaction with t-value = 4.917 (p-value 0.001 < 0.05 rejected H_0), repair lead time had a significant positive effect on satisfaction with t-value = 3.238 (p-value 0.002 < 0.05 rejected H_0), and location had significant positive effect on satisfaction as t-value = 2.471 (p-value 0.015 < 0.05 rejected H_0). Beta is a standard score that indicates the order of influence of independent variables from strong to weak. We can see the importance of the factors of repeat purchase, repair lead time, and location, respectively.

A constant of 0.585 indicates that, if repeat purchase (RP), repair lead time (LT), and location (L) are constant (unchanged), then satisfaction (SAT) is positive at 0.585 with a standard error of 0.379.

The regression coefficient of the variable repeat purchase (RP) has a positive value on satisfaction of 0.465, or 46.5%, indicating that repeat purchase affects customer satisfaction. If the repeat order score is increased by 1 unit, the customer satisfaction score will increase by 0.465 units with a 0.095 standard error.

The regression coefficient on the variable repair lead time (LT) has a positive value on satisfaction of 0.249, or 24.9%, indicating that the lead time of servicing affects customer satisfaction. If the lead time score is increased by 1 unit, the customer satisfaction score will increase by 0.249 units with a 0.077 standard error.

The regression coefficient on the location (L) variable has a positive value on satisfaction of 0.169, or 16.9%, indicating that the location of service center affects customer satisfaction. If the location order score is increased by 1 unit, the customer satisfaction score will increase by 0.169 units with a 0.068 standard error.

3.2 Discussion

3.2.1 Summary of the dimensions of service quality

Service quality was removed from the study because it had no significant influence on satisfaction. According to the findings, service quality was removed from the study, and the majority of respondents believed the branded service centers' quality and reputation were acceptable. As a reason, give more weight to other variables. This is because the service provider is a Denso distributor that is constantly developing the competence of their technicians. However, many commented on the speed with which repairs were completed. This is similar with the findings of Blake et al. [23], who discovered that the speed of service is important for automotive firms. Customer expectations and new disruptive technology are among the major difficulties challenging today's automotive firms. As the service is fairly standard, the customers are already delighted. The quality is also affected because it introduces value to the customer and keeps the automotive industry profitable. Meeting the servicing needs of customers has been proven to be the first step to customer satisfaction in an automotive organization [24]. Loomba [25] stated that the main objective of after-sales service is to keep the customer satisfied and loyal through trust, credibility, and security provided by the organization, and by building long-lasting connections that contribute to an increased positive market performance. The expertise of technicians helps to improve the quality of service work. Knowledge within an organization is always important, but relevant knowledge is even more important today than it was even ten years ago, due to the intense pressures that businesses are currently experiencing.

3.2.2 Summary of the dimensions of repair price

This factor was also left out of the study. Although price is a significant consideration, some jobs such as servicing bus air conditioners, required the skills of specialists in deciding whether or not to use a service, the service center, on the other hand, operates under a world-class brand. As a result, there is a standard repair cost. Pricing is based on the number of hours spent on each type of work. Before a repair is undertaken, there is a price quote. There are also conditions such as discounted spare parts and payment credit. As a result, customers are already satisfied with their services. Regardless of the fact that the pricing strategy is complex, it has a direct impact on customer satisfaction. Customers want to find a way to reduce the costs in their businesses. However, if the price is right for the quality, a satisfactory level of satisfaction will be achieved.

3.2.3 Summary of the dimensions of repeat purchase

Referring to the regression equation results, repeat purchases had a 46.5% impact on satisfaction, which is not very high. However, it is a value that reflects the needs of the bus air conditioner repair customers who responded to the questionnaire. Many factors influence repeat purchases, such as preventive maintenance, the need for specialized craftsmen, etc. If we look at the beta values, we can see that the results for repeat purchases are higher than the results for other factors (0.430 > 0.252), indicating that the customer is satisfied with the service and intends to use it again for future air conditioner repairs. Repeat purchase had a significant positive impact on satisfaction with t-test = 4.917 (p-value 0.001 < 0.05 rejected H_0). As a result, it was determined that repeat purchase influences service satisfaction.

3.2.4 Summary of the dimensions of repair lead time

Again referring to the regression equation results, because the majority of customers who brought their buses in for repairs were drivers, the effect of repair time on satisfaction was 24.9%. Even if the driver has time to rest during the repairs, this still has a direct impact on the wait. Ticket sales generate revenue for bus operators, and drivers are compensated based on the revenue generated by ticket sales. Buses cannot make money if they are stopped for an extended period of time. As a result, there is concern about the repair period. In Table 7, the beta value, on the other hand, is 0.252, which is higher than that for location, but lower than that for repeat purchase. Repair lead time had a significant positive effect on satisfaction, with t-test = 3.238 (p-value 0.002 < 0.05 rejected H_0), indicating that repair lead time also had an impact and influence on customer satisfaction.

3.2.5 Summary of the dimensions of location

The location of the service center had a significant impact with a p-value of 0.015 < 0.05. This is due to the bus industry, which is a large industry. When air conditioners malfunction, buses must be taken to a service center, which has limitations in terms of location, as setting up a repair service center usually requires a very large area, which may be outside of the city or in the outer suburbs. As a result, location has a significant impact on customer satisfaction, and this can be seen from t-test = 2.471. As a result of the above p-value, H_0 is rejected. We can see that the regression equation has a 16.9% effect, so it is possible to say that the location has a slight influence.

3.2.6 Re-grouping variables

Furthermore, the researchers were interested in how the new correlations of service quality and repair price with

importance variables from previous outcomes were related. Table 8 was divided into two groups so that statistical equations could be used to determine the relationship of effect between variables in each group. To determine whether the results of the previous regression equation analysis differed in terms of service quality and repair price.

Table 8. Re-grouping of all variables.

Dependent Variable	Group	Independent variable
Satisfaction (SAT)	A	*Service quality (SQ)* Repair lead time (LT) Repeat purchase (RP) Location (L)
	B	*Repair price (P)* Repair lead time (LT) Repeat purchase (RP) Location (L)

Using regression equations to analyze the data, Table 9 shows the results for Group A, which clearly describe the relationship and effect of the factors.

Satisfaction (SAT) = 0.514 + 0.073 Repair price (P) + 0.439 Repeat purchase (RP) + 0.238 Repair lead time (LT) + 0.155 Location (L).

Table 9. Group A—multiple linear regression analyses.

Variable	B	Beta	*t*-value	*p*-value
Service quality (SQ)	0.126	0.127	1.390	0.168
Repeat purchase (RP)	0.401	0.373	3.838	<0.05
Repair lead time (LT)	0.229	0.232	2.943	<0.05
Location (L)	0.155	0.197	2.257	<0.05
Constant	0.440			0.265

We can conclude from the above results that when service quality, repeat purchase, repair lead time, and location remain constant (unchanged), satisfaction (SAT) is positive at 0.440 with a standard error of 0.392. However, from *p*-value = 0.168 (> 0.05), it was determined that service quality had no effect on satisfaction.

Following that, the regression was examined to determine the results for Group B, as shown in Table 9.

Satisfaction (SAT) = 0.514 + 0.073 Repair price (P) + 0.439 Repeat purchase (RP) + 0.238 Repair lead time (LT) + 0.155 Location (L).

Table 10. Group B—multiple linear regression analyses.

Variable	B	Beta	t-Value	*p*-Value
Repair price (P)	0.073	0.073	1.005	0.317
Repeat purchase (RP)	0.439	0.098	4.476	<0.05
Repair lead time (LT)	0.238	0.078	3.062	<0.05
Location (L)	0.155	0.070	2.216	<0.05
Constant	0.514			0.186

Based on the above findings, we conclude that, when the repair price, repeat purchase, repair lead time, and location are constant (unchanged), satisfaction (SAT) is positive at 0.514 with a standard error of 0.386, and the repair price factor has no effect on satisfaction with *p*-value = 0.317 (> 0.05).

4. CONCLUSIONS

Five factors of interest in the research, namely service quality, repair price, repeat purchase, repair lead time, and location, were of varying importance. According to the findings from effective statistical tools, customers are unconcerned about the quality of repair work and the price, with little interest in location, but are focused on repurchasing and repair times as major influences on satisfaction. Furthermore, to confirm the stepwise outcome, the researchers took the two non-effect factors and analyzed the relationship using a regression equation with the significant factor again. The resulting recommendation is that the company should concentrate on its policy of providing customer satisfaction through appropriate marketing strategies that are designed for specific needs. However, service centers need to develop a service system policy that emphasizes the importance of managing customer satisfaction in the area of after-sales service. Customers will return to use a service because they are happy with the work that was performed, particularly the skill of the technicians, as well as a reasonable price. The speed with which technical problems in complicated air conditioning systems are analyzed is also important. For example, to fully comprehend customer expectations and service, and to meet customer needs, a new dimension of service to suit all target customers should be designed. After-sales service keeps customers coming back and encourages them to recommend your company to others. Studying the significance of the factors that influence customer satisfaction in air conditioning service centers will support executives in understanding the true needs of customers and those involved in the supply chain, and can direct business operations to maintain competence and long-term competitive advantages.

5. ACKNOWLEDGMENTS

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