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# **Survey on Customer Satisfaction Towards Courier Services in Johor**

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Abstract: The rapid rising of the e-commerce industry has boosted the courier industry in Malaysia. The courier service plays a vital role in delivering the products within the shortest time with the best condition. Courier companies should offer superb service quality to meet customer satisfaction and become the best choice in this competitive industry. This study aims to identify the customer preference on the courier service company in Johor by using the descriptive analysis and the Chisquared test. Next, to understand the factors that influence customer satisfaction toward the courier services using the gap analysis and SERVQUAL model. Lastly, to determine the relationship between cost, operation and satisfaction toward the courier services using the Spearman's rank correlation coefficient. A total of 384 responses has been collected via Google form. The Cronbach's alpha test revealed that the strength of relations is excellent for the five dimensions in the SERVQUAL model, namely reliability, assurance, tangibles, empathy, and responsiveness. The J&T Express is chosen as the most preferred courier company in Johor. The gap analysis showed that all five dimensions failed to meet the customer expectations. There are positive relationships between delivery cost and operation with customer satisfaction. The overall customer satisfaction score (CSAT) is 82.7% showed that the courier services must be enhanced. Based on the fishbone diagram, the courier company should improve the cost, customer service, operation and convenience, efficiency and timeliness, tracking, notification, parcel handling and management.

Keywords: Courier Service, SERVQUAL Model, Survey, Gap Analysis

# 1. Introduction

Courier service is a personalized mode of delivery. It is associated with the collection and delivery of parcels, packages, letters, and printed materials [1]. The courier market is mainly driven by the growth of e-commerce in Malaysia. The strike of the coronavirus 2019 (COVID-19) has affected the daily life. Everyone is encouraged to stay at home to reduce the risk of virus infection. The demand for packages deliveries grew 35% in volume with the surge online shopping during pandemic [2]. Delivery

is an important part of a purchase, so it is definitely something which any commercial establishment needs to focus on [3]. Customer satisfaction defines the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services exceeds a specific goal [4]. It is the determination of customers toward the services offered. The performance of a company can be improved after identifying the factors that affect customer satisfaction [5].

Service quality is a determinant factor for a business to succeed because it is critical in achieving customer satisfaction [6]. Good service quality enables a brand to gain an outstanding reputation and attracts loyal customers. It enables to attract new customers too. Customers are the principal judge of quality because they are the ones who pay and support the ongoing business [7]. Feedback is the key to customer reaction to determine the methods of improving the business effectiveness [8].

However, many complaints are received regarding the poor service experience from the delivery service offered by the courier services offered [9a]. Hence the courier service company should identify what needs to be improved to encounter with the customers' expectations in the courier services. The purpose of this study is to identify the customer preference on the courier service companies in Johor by using the descriptive analysis and the Chi-squared test. Then, to understand the factors that influence the customer satisfaction toward the courier services in Johor by using the gap analysis and SERVQUAL model. Lastly, to determine the relationship between cost, operation and satisfaction toward the courier services in Johor by using the Spearman's rank correlation coefficient.

#### 2. Materials and Methods

The data collection method and the pre-testing of the survey were discussed in this section. Statistical methods and survey analysis techniques were also included to achieve the study's objectives.

### 2.1 Data collection

The data collection is the process of gathering the information in a systematic way to answer research questions, test hypotheses and evaluate outcomes [10]. The data collection tool used in this study is self-administered questionnaire in Google form to collect the information of the customer satisfaction towards courier services in Johor. This study is conducted using convenience sampling. It belongs to non-probability sampling technique which the samples are selected based on the subjective judgment rather than random selection [11]. The population of this study is the public in Johor. The number of respondents for the survey is 384. The sample size was calculated by the formula in equation 1 [12], with parameters N (population size),  $\rho$  (proportion of populated expected to select),  $\rho$  (acceptable amount of sampling error or precision) and  $\rho$  ( $\rho$  ( $\rho$  ( $\rho$  confidence interval).

$$n = \frac{[(N)(p)(1-p)]}{[(N-1)(\frac{B}{C})^2 + (p)(1-p)]}$$
 Eq. 1

# 2.2 Reliability test

Cronbach's alpha reliability test is utilized to test the reliability coefficient of scale [13]. It can be written as a function of the test items and the average inter-correlation among the items. It is used to test the internal consistency of the pilot survey. The formula is shown in equation 2 [14], with parameters N (total number of items),  $\bar{c}$  (average inter-item covariance among the items) and  $\bar{v}$  (average variance).

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N-1)\bar{c}}$$
 Eq. 2

## 2.3 Descriptive analysis

Descriptive analysis is the summary statistics that concludes the information gathered and transforms it into a beneficial context. It is used to present and summarize the demographic of the respondents collected from the survey.

## 2.4 SERVQUAL model

SERVQUAL models give a basic inspection through the perceptions and expectations format encompassing statements for each of the five service quality dimensions: reliability, assurance, tangibles, empathy and responsiveness [15]. It is applied to identify the factors that influenced the customer satisfaction toward courier services based on the five dimensions.

# 2.5 Non-parametric test

Non-parametric tests are the distribution-free test of hypotheses, it is useful even when samples are drawn from unknown distribution or data is measured at nominal or ordinal scale [16]. Chi-squared test is the most well-known non-parametric test. It is suitable to test the significance between the relationship of two attributes when the data is measured nominal or ordinal data scale. In this study, it is applied to investigate whether there is an association between the demographic profiles of the respondents and their preference on the courier service company. The hypothesis statement for Chi-squared test is

 $H_0$ : There is no association between demographic profile and preference for the courier service company.

 $H_1$ : There is an association between demographic profile and preference for the courier service company.

The formula is computed in equation 3 [17], with the parameters  $\chi^2$  (Chi-squared),  $O_i$  (observed value) and  $E_i$  (expected value).

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$
 Eq. 3

Spearman's correlation coefficient measures the strength and direction of the association between two ranked variables when data is measured at ordinal, interval or ratio scale. It is applied to study the correlation between cost, operation and customer satisfaction towards courier services. The formula is portrayed in equation 4 [18], with parameters  $\rho$  (Spearman's rank correlation coefficient),  $d_i$  (difference between the two ranks of each observation) and n (number of observations).

$$\rho = 1 - \frac{6\sum d_i^2}{n(n^2 - 1)}$$
 Eq. 4

# 2.6 Service quality gap analysis

The service quality gap analysis is used as an appropriate approach for examining the evaluation of a professional service [19]. The performance is evaluated based on the mode gap score. The expectations are exceeded if the gap score more than zero, the gap score equals zero indicating the expectations are met. The expectations are not met if the gap score is less than zero. It is used to investigate whether the courier services meet the expectations of customers. The formula is computed in equation 5 [9b], where P is the customer's perception and E is the customer's expectation.

Service Quality Gap Score = 
$$P - E$$
 Eq. 5

#### 2.7 Customer Satisfaction Score (CSAT)

Customer Satisfaction Score (CSAT) is a value that examines how a customer feels and reacts to a product or service offered. It can assist the company in benchmarking performance and retaining more customers. It is measured by one or more variations of the statements. The statement variations enable understanding the customer satisfaction level toward the courier service provided for every statement in every dimension of the SERVQUAL model. The formula is shown in equation 6 [20].

$$CSAT \ Score \ (\%) = \left(\frac{Sum \ of \ All \ Scores}{Sum \ of \ the \ Maximum \ Possible \ Scores}\right) x \ 100$$

## 2.8 Fishbone diagram

The fishbone diagram is also known as the cause and effect diagram, as well as the Ishikawa diagrams. It is a visual representation tool used to present and group the cause and effect of a specific event [21]. The fishbone diagram applied in this study showed a comprehensive view of the type of solutions suggested by the respondents to improve the courier service experience.

#### 3. Results and Discussion

The analysis of the findings from survey were showed and discussed in this section. The results were obtained and discussed to achieve the objectives of study.

# 3.1 Reliability analysis

Pilot survey has collected 38 samples. The reliability of each dimension in the pilot survey was measured using Cronbach's alpha reliability test. The five dimensions in the SERVQUAL model were measured separately to achieve a better understanding. The reliability analysis was run on Statistical Packages for the Social Sciences (SPSS) to obtain the results, as shown in Table 1. The item in each dimension included the customer's perception of the performance and customer's expectation of the courier services. The results portray all five dimensions scored more than 0.9. The overall measure of Cronbach's alpha is 0.912, indicating a high internal consistency for the scale with the items listed in each dimension. Hence, this questionnaire is reliable for actual survey.

Dimensions	Number of items	Cronbach's alpha
Reliability	8	0.912
Assurance	10	0.910
Tangibles	8	0.911
Empathy	10	0.910
Responsiveness	8	0.911
Overall	44	0.912

Table 1: Reliability analysis results

# 3.2 Demographic Profiles

Table 2 presented more than half of the respondents are female (58.6%). There are 40.6% Malay, 51.6% Chinese, and 7.8% Indian respondents. The respondents consist of all ranges of age group, but 48.7% of the respondents are 24 years old and below. The public in all Johor states is involved in this survey. The top three districts are Johor Bahru (27.3%), Batu Pahat (14.1%) and Muar (13%), respectively. Around half of the respondents are degree holders (50.3%). Besides, 38% of respondents are students, 29.4% are private servants, 19.3% are self-employed, 6.3% are unemployed, 5.2% are government servants, and 1.8% have retired. Around half (49%) earn below RM1500 monthly. The

result is followed by 95 (24.7%) respondents who earn between RM1500 to RM3000 per month. There are 62 (16.1%) respondents who make between RM3001 and RM4500 per month. Only 39 respondents (10.2%) earn above RM4500 per month.

Table 2: Descriptive analy	sis for demog	raphic profiles
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No.	Demographic	Frequency
1	Gender	Male: 41.4%, Female: 58.6%
2	Ethnicity	Malay: 40.6%, Chinese: 51.6%, Indian: 7.8%
3	Age group	24 and below: 48.7%, 25 to 29: 20.8%, 30 to 34: 7.3%, 35 to 39: 3.6%,
		40 to 44: 5.7%, 45 to 49: 5.2%, 50 to 54: 6.0%, 55 and above: 2.7%.
4	District	Johor Bahru: 27.3 %, Batu Pahat: 14.1%, Muar: 13%, Kulai: 10.2%,
		Segamat: 7.3%, Pontian: 6.5%, Kota Tinggi: 6.5%, Kluang: 6.5%,
		Tangkak: 4.7 %, Mersing: 3.9%
5	Education	Degree: 50.3%, Diploma/Certificate: 26.3%, Secondary school: 15.9%,
	background	Master: 4.7%, Primary school: 1.3%, Doctorate: 1.0%, %, No formal
		education: 0.5%,
6	Employment	Student: 38%, Private servant: 29.4%, Self-employed: 19.3%,
	status	Unemployed: 6.3%, Government servant: 5.2 %, Retired: 1.8%
7	Monthly	Below RM1500: 49%, RM1500-RM3000: 24.7%,
	income	RM3001-RM4500: 16.1%, Above RM4500: 10.2%

# 3.3 Preference on courier service company

Figure 1 shows that almost half of the respondents (50.5%) choose J&T Express as their most preferred courier service company. The second is Pos Laju (16.4%) and the third is DHL Express (14.3%).

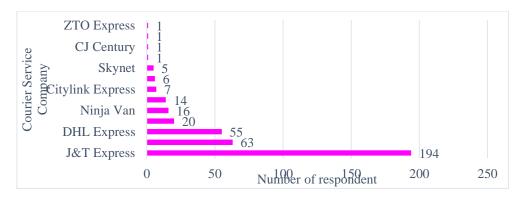


Figure 1: Respondent's preference on courier service company

The Chi-squared tests were applied to test whether courier service company preference is affected by these demographic profiles. Based on Table 3, district is the only item with *p*-value less than 0.05. Hence, the null hypothesis stating there is no association between district and preference on the courier company is rejected. There is sufficient evidence to conclude that there is an association between district and preference on the courier service company. Most of the courier service companies were chosen by more than half or all districts. J&T Express is the highest chosen courier company by all districts.

Table 3: Chi-squared test between demographic profile and preference on the courier company

Item	Demographic profile	Value	Asymptotic Significance (2-sided)
1	Gender	11.212	0.593
2	District	160.199	0.005
3	Age group	94.009	0.394
4	Monthly income	49.561	0.120

#### 3.4 Gap analysis for SERVQUAL model

Table 4 demonstrates that the courier service companies providing service as promised yielded a negative gap difference and not meet customer satisfaction. Courier service providers needs to have high commitment in providing the best services. The expectation on the delivery of the parcel is on time is also unmet. The lack of reliability on timeliness in parcel delivery has become a concern to the courier service company. However, the expectation of the advanced update on the tracking system and notifying the customer before proceeding with parcel delivery are achieved. Customers can always track their parcels with a simple click online. All details are updated when the packages are in transit and on its way to its destination. Some courier service companies like DHL Express sends a message before delivery, and Ninja Van sends an email once the parcel is dispatched. Many courier service companies would also call the recipient to enable successful delivery. Therefore, the courier company meets the expectation of notifying the customer via call or message before delivery.

Table 4: Gap analysis for reliability

Item	Statement	Gap difference
1	The courier company provides service as promised.	-1
2	The delivery man of the courier company delivers parcel on time	-1
3	The courier company keeps the tracking number updated.	0
4	The courier company notifies customer (call or message before delivery)	0

Table 5 portrays the kind and helpful delivery man fulfilled the customers' expectations. However, the kind and helpful staff at the courier company does not meet the customers' expectations. The courier company staff does not always greet customers with a smile and this caused a negative gap difference. Similarly, the courier service provided is unable to get the customer secured. Moreover, the customer's expectations do not achieve when the courier service staff is not willing to deal with the customer's problems. The customer service staff have to go through strict trainings before dealing with customers. Customer service should be helpful and always ready to assist customer. Next, delivery men have to handle the parcels with extra care to make sure the parcels could be delivered as the original conditions.

Table 5: Gap analysis for assurance

Item	Statement	Gap difference
1	The delivery man of the courier company is kind and helpful.	0
2	The staff of the courier company is kind and helpful.	-1
3	The staff of the courier company always greets customers with a smile.	-1
4	The courier company enables customers to deliver parcels securely.	-0.5
5	The courier company offers willingness to settle customer's problems.	-1

Table 6 shows the competence of the courier provider facilities and transportation tools, the staff dress code and attitude of personnel, the convenience of outlets and environment are not satisfied by customer expectations. Only the professional packaging standard meets the customers' expectations. The courier service provider should upgrade the facilities and transportation tools. The staff should dress clean and tidy. The attitude should be approachable and friendly. The courier service provider should improve the convenience of the outlets by establishing more branches near the residential area.

Table 6: Gap analysis for tangibles

Item	Statement	Gap difference
1	The efficiency of courier provider facilities and transportation tools	-1
2	The staff dress code and attitude of personnel.	-1
3	The convenience of outlets and environment.	-1
4	The courier company's item packaging professional and standard.	0

Based on Table 7, the customer service lacks of compassion and patience when serving customer. Besides, the customer expectation on the availability of customer service does not achieve. Despite the three unmet expectations, the communication skill and the awareness of the delivery man meet the customer expectation. The courier service provider should take note in improving the customer service. The staff in-charged of customer service should be trained well. The courier service company should also hire more staff to be responsible for customer service to not keep customers waiting long.

Table 7: Gap analysis for empathy

Item	Statement	Gap difference
1	The customer service of the courier company is caring in serving the	-1
	customers.	
2	The customer service listens to the customer's problem patiently.	-1
3	The customer service is always available to serve the customer.	-1
4	The delivery man can communicate with customers well.	0
5	The delivery man is aware of the customers' needs.	0

Table 8 reveals that the responsiveness of the courier service company in providing prompt services to the customers does not achieve the customers' expectations. The customer service is not responsive to deal with the problem faced by the customer. Besides, the statement on the parcel is out for delivery once it reaches the courier company, does not meet customer expectations. The willingness of the delivery man to provide the second time delivery if the first attempt fails, also unmet the customer expectations. Therefore, the courier service provider should improve the services and customer service to be more responsive to solve the customer's problem quickly. The courier company should deliver the parcel to the customer as soon as it reaches the last transit point to prevent the parcels store at courier company for another day. The delivery man should be ready to provide the second time delivery if the first attempt is unsuccessful.

Table 8: Gap analysis for responsiveness

Item	Statement	Gap difference
1	The courier service provides prompt services to the customers.	-1
2	The customer service is ready to help if the customer faces any problem.	-1
3	The parcel is out of delivery as soon as it reaches the courier company.	-1
4	The delivery man is willing to provide second time delivery if the first	-1
	delivery fails.	

# 3.5 Spearman's rank correlation coefficient

This section examines whether customer satisfaction toward courier services is affected by delivery cost and operation of courier service company by using the Spearman's rank correlation coefficient.

#### 3.5.1 Cost

Table 9 shows two cost related statements and one satisfaction statement. Cost 1 represents "you take into consideration on the delivery fees before choosing a courier service company", Cost 2 represents "you choose the courier service company which offers the lowest delivery fees" and satisfaction 1 is "the delivery fees will affect your satisfaction toward the courier service company". There are moderate positive relationships between cost and customer satisfaction level with the correlation coefficient values are 0.399 and 0.440, respectively. Customers are concerned on the delivery fees before choosing a courier service company and the delivery fees have positive impacts on the customer satisfaction. With the lower cost, it can improve the customer satisfaction level toward the courier service companies.

Table 9: Spearman's correlation between cost and customer satisfaction

Statement	Cost 1	Cost 2	Satisfaction 1
Cost 1	1.000	0.438	0.399
Cost 2	0.438	1.000	0.440
Satisfaction 1	0.399	0.440	1.000

# 3.5.2 Operation

Based on Table 10, there are two operation related statements and three satisfaction statements. Operation 1 states "you feel secure relying on delivery services offered by the courier service company" and Operation 2 is "you feel secure with the delivery proof required upon successful delivery". Whereas Satisfaction 1 is "you will repeat using the same courier company if you are satisfied with the performance of the courier company", Satisfaction 2 mentions "you will switch to another courier company if there is bad news reported regarding the courier company" and Satisfaction 3 is "you will switch to another courier company if you are dissatisfied with the performance of the courier company". The results reveal that the reliable courier service positively affects satisfaction levels. The customer would repeat visiting the same courier service company if they are satisfied with the reliable services with a moderate positive correlation value of 0.403, there is a weak positive correlation of 0.252 between reliable service and switching to another courier service company if bad news is reported. The customers are likely to change to another courier service company if there is terrible news reported because the courier service provided is less reliable in this situation. Besides, there is a weak correlation of 0.244 between the reliable operational service and switching to another courier company if the performance of the courier company is dissatisfying. The customers switch to another if the they are dissatisfied with the poor reliability courier service.

Next, the proof required by the delivery man upon successful delivery also has a moderate positive correlation at 0.450 with the repetitive use on the courier company. Customers would repeat using the same courier service company with the secured delivery process. Despite proof is required once the parcel is delivered, if there is bad news regarding the courier service company, customer would switch to another courier service company with a weak positive correlation of 0242. Even though successful delivery proof is required, customer would also change to another courier service company when there are other poor services provided with a weak positive correlation coefficient of 0.311.

Table 10: Spearman's correlation between operation and customer satisfaction

Statement	Operation 1	Operation 2	Satisfaction 1	Satisfaction 2	Satisfaction 3
Operation 1	1.000	0.531	0.403	0.252	0.244
Operation 2	0.531	1.000	0.450	0.242	0.311
Satisfaction 1	0.403	0.450	1.000	0.204	0.402
Satisfaction 2	0.252	0.242	0.204	1.000	0.558
Satisfaction 3	0.244	0.244	0.402	0.558	1.000

# 3.6 Customer Satisfaction Score (CSAT)

Table 11 shows the Customer Satisfaction Score (CSAT) results. The highest CSAT is tangibles (84.3%), followed by reliability (83%). The assurance achieves CSAT at 82.5%, and empathy records CSAT at 82.11%. The lowest CSAT is 81.6% for responsiveness. The overall CSAT is 82.7%. Generally, customers are satisfied with all the dimensions of the SERVQUAL model, with CSAT scores ranging from 81.6% to 84.3%. The CSAT of reliability can be increased by offering prompt service, delivering a parcel on time and keeping the tracking system updated. Patience and caring are the basics in raising empathy toward the customer. The customer service should be assured to provide a good standard and high-quality service. The tangibility can be enhanced by upgrading the facilities and

expanding courier service coverage. The customer service and delivery man must be readily responsive to tackle customers' problems to increase customer satisfaction.

Table 11: Customer Satisfaction Score (CSAT) for SERVQUAL model

Dimensions	CSAT (%)
Reliability	83.00
Assurance	82.50
Tangibles	84.30
Empathy	82.11
Responsiveness	81.60
Overall	82.70

# 3.7 Fishbone diagram

Based on Figure 2, there are eight categories of solutions to improve the courier services demonstrated in the fishbone diagram, collected from the open-ended question of the survey. First and foremost, the courier service should improve the efficiency and timeliness of the delivery. The delivery time is not consistent. Sometimes, it takes a long time to reach the destination. Hence, it is suggested that the courier service company should not delay the parcel delivery. The second category is operation and convenience. As the demand for courier service is extremely high nowadays, the courier company is advised to lengthen the operational hour or offer services for 24 hours. Besides, the courier service company should establish more branches and drop-off points. Thus, the customers can obtain courier service more conveniently. The next category is customer service. It is the representatives of the company to assist and entertain customers' questions and complaints. The customer service team has to be patient in helping the customer solve any consequences faced in the delivery process. Moreover, the courier service company should hire more staff to engage with customer service to enable quick response. The courier service provider should train the staff to treat the customer nicely. The cost is always a concern to customers. The courier service company is advised to lower the shipping fees. They can also offer bulk prices for customers with bulk parcels. Moreover, the company can hold promotions on the shipping fees during festivals because the demands are tremendously high before festivals.

A tracking system enables the user to get to know the transit process of the parcel during delivery. Therefore, it is necessary to keep the tracking system up to date. The respondents suggest the tracking system provides real-time tracking like the Foodpanda to know the parcel's exact location. The tracking system can be upgraded to provide the estimated arrival time of the parcel. Notification is one of the eight categories to improve courier services. The delivery man can notify the customer before delivery. This action enables the customer to be well-informed and avoid fail delivery. The delivery man should contact the customer if nobody is at home to plan the next delivery time. In addition, the courier service provider can fix the time to deliver to each area. So, the customer can be ready to receive the parcel at a specific time. Safety in parcel handling is an issue for courier service. The staff and delivery man should handle the parcel with care. Every parcel is precious to its owner, and the staff should not throw the parcel because it may cause a defect to the item inside the package. The courier service company should provide secured packaging to protect the package. Last but not least, the courier service company must improve its management. It is necessary to listen to the customer complaint and make a change to it. All of the workers must be trained before officially serving the customer. A well-trained staff is beneficial in assisting the customer to proceed with prompt delivery and offer excellent service. The company should hire adequate teams to fulfil the workload. The logistics and the delivery time should be scheduled properly to avoid excess waiting time. The company should strategize the operation and management plan to offer better services to the customer.

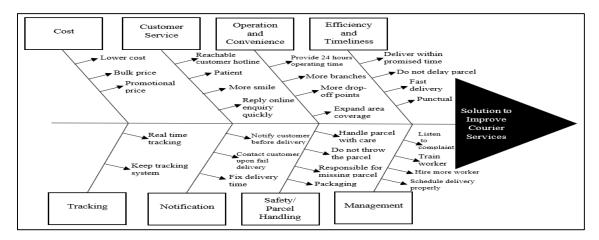


Figure 2: The fishbone diagram on respondent's suggested solution to improve courier services

#### 4. Conclusion

Service quality is beyond crucial to determine customer satisfaction on courier service. The overall customer satisfaction score obtained for the courier service in Johor is 82.7%. It shows that the courier services by any companies still need improvements. The most chosen courier service company is J&T Express with almost half of the respondents. Hence, we can see that respondents in each district have almost similar preferences. All criteria of the SERVQUAL model did not meet customers' expectations. Courier service companies should work hard to shorten the gap. Cost and operation have a positive impact on the customer's satisfaction level. Thus, the delivery fees affect the customer satisfaction level. The secured delivery process enables the customer to become potential to the courier company. It is essential to endeavour customers' expectations to stand out in the competitive courier market. The survey can be improved by focusing on a specific courier company. The number of respondents should increase because larger sample sizes provide better accuracy. Future research is encouraged to widen the scope of study to the whole of Malaysia to be comparable with other countries. The dimension of the SERVQUAL model should be modified based on the aspect concerned by the respondent.

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