

Quality Comparison for Online Transportation Services Using the Competitive Zone of Tolerance Based Importance- Performance Analysis

Arfan Bakhtiar, Febby Veronica, and Denny Nurkertamanda

Department of Industrial Engineering
Diponegoro University
Semarang, Indonesia
arfanbakhtiar@gmail.com

Abstract

Online Transportation X and Online Transportation Y are technology companies that provide online application-based transportation services. Online Transportation X has operated in Semarang City since 2015 and managed to dominate the market share until the emergence of Online Transportation Y in 2017. In regard to this, benchmarking is needed to determine the strategies and competitive positions of the two companies to make improvements in the quality of services to be provided and be able to compete competitively. Management needs to know the service quality that their companies provide through looking at the customer satisfactions upon the services that they receive and understanding or identifying the service quality desired by customers. There are 5 dimensions of service quality in the SERVQUAL concept developed by Parasuraman et al. (1988), namely tangibles, reliability, responsiveness, assurance, and empathy that incorporate the use of the Competitive Zone of Tolerance based Importance Performance Analysis (CZIPA) method. The comparison results of the quality of services show that online transportation X had 3 attributes short of its competitor. On the other hand, online transportation Y had 11 attributes short of its competitors. There were 3 attributes in online transportation X and 4 attributes in online transportation Y which were the priority improvements. The suggested improvements were based on the gap between the importance and performance of the online transportation service providers.

Keywords

Online Transportation, SERVQUAL, CZIPA.

1. Introduction

Online Transportation X is a technology company from Indonesia that provides online application-based transportation services. Online transportation X is a pioneer of online motorcycle taxis in Indonesia which was founded in 2010 in Jakarta and has grown rapidly since early 2015. Currently online transportation X has been downloaded more than 1,000,000 times on Google Play on the Android operating system and the App Store for the operating iOS operating system. Online transportation X has been operating in 50 cities in Indonesia including Semarang City since November 2015. Alternatively, online transportation Y was founded in 2012 with its head office located in Singapore and started operating in Indonesia in 2014. Online transportation Y has operated in 100 cities across Indonesia and is present in Semarang City since February 2017.

Companies X and Y are technology companies that provide transportation service applications that connect drivers (partners) and passengers (consumers). Companies X and Y cooperate with partners as supporters in operating their services by implementing a recruitment system. These partners will directly serve the needs of consumers within the policies and service SOPs of the company. Quality service plays a very important role in customer satisfaction, prompting consumers to make repeat purchases. Through this, companies can gain customers in large numbers and create profits (Panjaitan and Yuliati 2016). However, if the service received by the customers is not in line with their expectations, perceived disappointment in the form of customer complaints can emerge. Such case will have a bad impact on the company's image, causing customers to lose trust in the company and thus turning to other competing companies (Riskayanti and Sitohang 2016). On this account, online transportation service providers need to pay attention to and improve service quality in order to achieve good customer satisfaction so that they may have the ability and strength to compete and dominate the market. The present study demonstrates the prioritization of attributes in quality improvements using CZIPA, which enables companies to achieve competitive advantage.

The purpose of this research is to identify the superior service quality indicators possessed by online transportation X as well as Y and to formulate the service priorities to be improved on both online transportation service providers using the SERVQUAL dimensions.

2. Literature Review

In improving service quality, the management of a company needs to know how customers perceive the services that the company provides and identify the desired service qualities of the customers. This study analyzed and identified the indicators that can increase customer satisfaction and the ability to compete among online transportation service providers. The dimensions used in this study are based on the SERVQUAL instrument which introduces the concept of satisfaction as a function of customer expectations and customer perceptions of the services received (Parasuraman et al. 1988). There are 5 dimensions of service quality in the SERVQUAL concept developed by Parasuraman et al. (1988), namely tangibles, reliability, responsiveness, assurance, and empathy which can incorporate the use of Competitive Zone of Tolerance based Importance-Performance Analysis (CZIPA) method by benchmarking against competing companies. According to Wober (2002), benchmarking is a systematic procedure to measure performance by way of comparison against other companies with the aim of achieving continuous improvement. CZIPA is a method able to determine the service variables are in line with customer expectations and resolve for other competing company services as the minimum service to be provided by the company (Chen 2014).

The method used in this research is the Competitive Zone of Tolerance based IPA (CZIPA). This method combines the concept of IPA (Importance-Performance Analysis) with Zone of Tolerance and Benchmarking. In the CZIPA method, performance/satisfaction, interests, and gaps are benchmarked against competitors. This helps in determining the market position and reduce measurement bias (Taplin and Ross 2012). The indicators used in this study are based on the Service Quality (ServQual) dimensions, where each indicator is known to have aspects of importance, satisfaction, and consumer expectations. In this method, the gap (average performance/satisfaction minus average importance) is first calculated. The gap is the difference between the average customer expectation and perception/satisfaction. The gap refers to the difference between mean importance and mean performance. Analysis of gap simplifies the four IPA quadrants into two different parts which are the areas of implications for decision making based on the ideal line. In this context, the service attributes that fall on the diagonal line parallel to the ideal line have the same gap. Whereas, the service attributes that fall on different diagonal lines, if the attribute is closer to the right side, will have bigger gap signifying greater satisfaction (Suanders 2007).

3. Methodology

The population in this study were all people who had used the two online transportation services. To start, the samples was determined. The samples were part of the number and characteristics possessed by the population (Sugiyono 2012). The research design conducted for the decision-making analysis of the two application-based online transportation service providers is descriptive with a quantitative approach. This study is designed to determine priority improvements that can be applied by the two online transportation service providers in order to be able to perform competitively. This study used the Competitive Zone of Tolerance based Importance-Performance Analysis (CZIPA) method. In this CZIPA method, the concept of benchmarking and the zone of tolerance against competing companies are combined. By combining these concepts, this method will reduce calculation errors, misplacement of matrices, and better define market positions. The CZIPA matrix processing in this study used the SPSS 22 software. The CZIPA processing results would obtain priority improvements that must be executed by both online transportation service providers.

4. Data Collection

The data collection in this study involved the preparation of questionnaires and its distribution through online form to customers in the city of Semarang. The questionnaire formulated was used as a portal for primary data collection which employed the survey method to obtain respondents' opinions (Pujihastuti 2010). The type of questionnaire used was a closed questionnaire, that is, respondents only make an assessment using a Likert scale of 1 to 5 based on their respective perceptions. The questionnaire consisted of 4 parts, namely the respondent's profile, performance satisfaction assessment, importance indicator assessment, and customer desires or expectations. The assessment indicators were sourced from the Proceedings entitled *Analisis Kualitas Pelayanan GOJEK Bandung* (Analysis of GOJEK Service Quality in Bandung) (Fachrurrozy and Rachmawati 2017) as shown in Table 1. There were several service indicators that were not included in the questionnaire, such as clear communication application within the tangible dimension and responsiveness in overcoming problems upon consumer complaints within the responsiveness dimension as this study only assessed the performance of partners who provide the transportation services. Following the data collection, the data obtained through the questionnaire was put up against the normality test. The normality test is a test to measure whether a set of data collected is normally distributed, i.e., the samples taken are from the same population. With this kind of data pattern, the data collected can thus be considered to be able to represent the population (Sudjana 2005).

Table 1. Questionnaire dimensions and attribute

No	Dimension	Attribute
P1	Tangibles	The vehicle physical conditions of the drivers are satisfactory (Fachrurrozy and Rachmawati 2017)
P2		Drivers are fully equipped (Fachrurrozy and Rachmawati 2017)
P3		Drivers care about what the consumer desires (Fachrurrozy and Rachmawati 2017)
P4	Empathy	Drivers quickly respond to consumer complaints (Fachrurrozy and Rachmawati 2017)
P5		Drivers maintain good relationship with consumers (Fachrurrozy and Rachmawati 2017)
P6	Responsiveness	Services are able to be provided quickly and correctly (informative in communication) (Fachrurrozy and Rachmawati 2017)
P7		Drivers can work with consumers (Fachrurrozy and Rachmawati 2017)
P8		The services provided by drivers can be trusted (Fachrurrozy and Rachmawati 2017)
P9	Reliability	Drivers are able to accurately perform services (Fachrurrozy and Rachmawati 2017)
P10		The services provided are consistent in terms of schedule for picking up and dropping off passengers
P11		Drivers adequate knowledge and skills in carrying out their duties (Fachrurrozy and Rachmawati 2017)
P12		Drivers are reliable and professional at their work (Fachrurrozy and Rachmawati 2017)
P13	Assurance	Drivers can give confidence to consumers (timeliness, comfort, safety) (Fachrurrozy and Rachmawati 2017)
P14		Drivers have expertise in running the vehicle properly (Fachrurrozy and Rachmawati 2017)

5. Results and Discussion

5.1. Characteristics of Respondents

Respondents data were obtained by distributing questionnaires to samples that were considered to representative of the characteristics of the population. The population used as the object of this research were customers who have used both online transportation providers X and Y providers in Semarang City more than four times. Calculation of the sample required in this study was 100 people. However, the total respondents used in this study were 160 people. From the data obtained in this study, it was known that as many as 66% of the respondents were women and the rest were men. The largest percentage of the respondents were students comprising 51% and then private employees at 22%.

5.2. Normality Test

Normality test was carried out on satisfaction and importance indicators data for both online transportation service providers as well as customer desires/expectations data. The assessment laid out in the questionnaire used the Likert-scale 1 to 5. The data obtained were data types with an ordinal scale, thus the normality test used a non-parametric statistical method, namely the Kolmogorv-Smirnov test. Based on the tests carried out, all data, i.e., data on satisfaction of both online transportation, data on the importance indicators on both online transportation, and data on customer desires/expectations, had normal distribution. This demonstrated that the sample used in this study adequately represent the population.

5.3. Importance-Performance Analysis Calculation Results

Table 2 presents the calculation results of the average satisfaction and importance of online transportation X to form the IPA matrix in Figure 1. Based on data processing for the two transportation service providers, all indicators measured have negative gap values. A negative gap value indicates that the performance provided by the partners is still below customer expectations. The larger gap value indicates dissatisfaction towards the transportation service providers.

Table 2. IPA scores of online transportation X

Item	Dimension	Performance (Satisfaction)	Importance
P1	Tangibles	4.19	4.68
P2		3.89	4.37
P3		3.29	3.78
P4	Empathy	3.34	4.38
P5		3.56	4.22
P6	Responsiveness	3.54	4.45

Table 2. IPA scores of online transportation X (con't)

Item	Dimension	Performance (Satisfaction)	Importance
P7	Responsiveness	3.49	4.26
P8		3.57	4.45
P9	Reliability	3.54	4.47
P10		3.46	4.43
P11		3.51	4.34
P12	Assurance	3.90	4.5
P13		3.67	4.47
P14		3.86	4.63

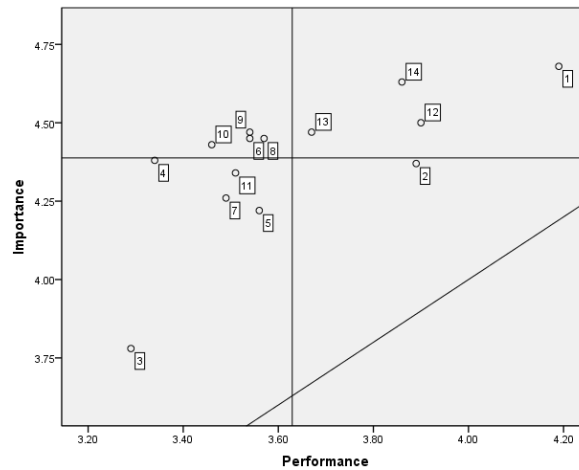


Figure 1. IPA matrix of online transportation X

Table 3 presents calculation results of the average satisfaction and importance of online transportation Y to form the IPA matrix in Figure 2.

Table 3. IPA scores of online transportation Y

Item	Dimension	Performance (Satisfaction)	Importance	Gap
P1	Tangibles	4.15	4.67	-0.52
P2		3.81	4.38	-0.57
P3	Empathy	2.94	3.83	-0.89
P4		3.4	4.38	-0.98
P5		3.32	4.14	-0.82
P6	Responsiveness	3.5	4.45	-0.95
P7		3.57	4.19	-0.62
P8	Reliability	3.53	4.43	-0.9
P9		3.58	4.42	-0.84
P10		3.35	4.4	-1.05
P11	Assurance	2.96	4.28	-1.32
P12		3.87	4.55	-0.68
P13		3.54	4.43	-0.89
P14		3.78	4.69	-0.91

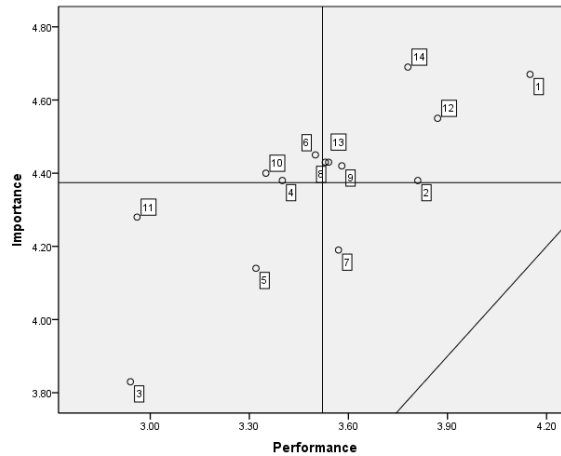


Figure 2. IPA matrix of online transportation X

Quadrant A is the quadrant that must be paid most attention to because it shows a high level of importance but low performance. In the online transportation X, there were 4 indicators in quadrant A or concentrate management here, namely indicators P10, P9, P6, and P8. In online transportation Y, there were 3 indicators in quadrant A, namely P10, P4, and P6.

In contrast to the IPA matrix, the horizontal axis in the CZIPA matrix is the value of CZSQ (competitive service quality ratio) and the vertical axis is the value of difference in importance (DI). The difference in importance (DI) is the difference between the value of the interests of the focal company and the value of the interests of competing companies (competitors). Figure 3 shows the CZIPA matrices of Online Transportation Matrix X and Y.

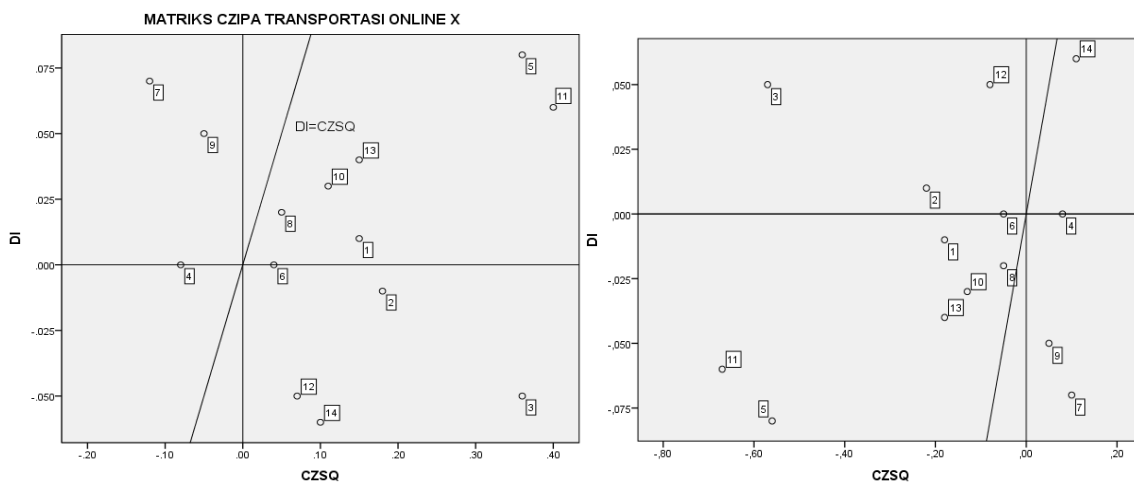


Figure 3. CZIPA matrices of online transportations X and Y

In the services provided, the online transportation X only had 3 indicators with negative CZSQ values. This shows that online transportation X was 11 indicators superior to its competitor, the online transportation provider Y. For online transportation X, all indicators that have a negative CZSQ value were in quadrant A. Meanwhile, for online transportation Y, out of 11 indicators, 4 of them were in quadrant A. From these indicators, the value of "d" was calculated to determine the priority of improvements, as shown in Table 5.

Table 4. Improvement priorities on online transportation X

Item	Attribute	Quadrant	CZSQ	d
P4	Drivers quickly respond to consumer complaints	Quadrant A	-0.08	-0.08

Table 4. Improvement priorities on online transportation X (con't)

Item	Attribute	Quadrant	CZSQ	d
P7	Drivers can work with consumers	Quadrant A	-0.12	-0.19
P9	Drivers are able to accurately perform services	Quadrant A	-0.05	-0.10

Table 5. Improvement priorities on online transportation Y

Item	Attribute	Quadrant	CZSQ	d
P2	GO-JEK drivers are completely equipped	Quadrant A	-0.22	-0.23
P3	Drivers care about what the consumer desires	Quadrant A	-0.57	-0.62
P6	Services are able to be provided by drivers quickly and correctly	Quadrant A	-0.05	-0.05
P12	Drivers are reliable and professional at their work	Quadrant A	-0.08	-0.13

The improvements are proposed based on three main criteria or condition, namely worse performance value when compared to competitors (negative CZSQ value), the indicator is placed within quadrant A, and display of the smallest gap or "d" value as shown in Table 4.

The recommended improvements that can be made by the two companies are:

- Online Transportation X

Proposed improvements that will be given to the management of online transportation service provider X, in relation to the three main indicators identified as priority improvements, are:

 - a. The first indicator determined as one of the priority for improvements is the condition which the driver cannot cooperate with the customer. What is meant by cooperation with the customer is that the case in which a driver should immediately contact customer to confirm the pick-up location. Drivers should contact their customers to confirm order and pick-up location as there are often misplaced locations in the application. Such misplacement makes it difficult for drivers to meet customers and thus customers will have to wait wait for too long. Before the chat feature was available in the online transportation X application, it was difficult for drivers to contact customers because it costs money to send messages or calls. However, now, a chat feature is available which can be used by drivers to contact customers with no additional fees. Drivers must, accordingly. be able to use the chat feature to the fullest in order to achieve convenience for the customers.
 - b. The second indicator is relation to the accuracy of the drivers in performing their services. The accuracy of the drivers entails the delivery of services by drivers which should be in accordance with the SOPs that have been set by the company, so as to equalize or standardized the services given by the drivers. Accordingly, when partners first register, the management should provide training and socialize the company's SOP to them.
 - c. The third improvement priority demands that drivers respond quickly to consumer complaints. Drivers should have a good ability to respond to complaints from passengers both regarding application info and services provided. The complaints submitted by customers are representative of customer dissatisfaction. Yet, in reality the response given by the partner or driver is slow or, in which case, drivers also feel that the complaints given were not immediately responded to by the management. The inadequate knowledge of the applications and services possessed by drivers is also a factor that play role in the generation of complaints. Hence, preparing the drivers with the necessary knowledge that can help them master the applications and service systems provided is imperative so that drivers are able to respond to customer complaints.
- Online Transportation Y

Proposed improvements that will be given to the management of online transportation service provider Y, in relation to the four main indicators identified as priority improvements, are:

 - a. The most important indicator identified was in regard to drivers care towards consumer desires. In practice this is manifested through offers of masks and headgear to customers, provision of raincoats when it rains, assistance in opening passenger footrests, as well as the act of courtesy of confirming to customers on the destination and route. Such acts are not stated in the SOP or Code of Ethics for the online transportation service provider Y, which thus prompts the drivers to think that do not need to do them. This indicator places very high value in generating customer satisfaction compared to, even, the lower level of performance of the company in relation to its competitors. It is much desired that drivers have increased awareness on hospitality towards consumers and their desires.

- b. The second indicator that requires priority is the provision of full equipment for drivers. Fully equipped facilities and infrastructure includes helmets and jackets with corporate identity worn by drivers, clothes and trousers, closed shoes, which are pleasant to look at and smell good. These indicators are listed in the SOP and Code of Ethics for online transportation service provider Y, but still demonstrate low rate of performance compared to its competitors. Such aspects play considerable factor in consumer considerations in using online transportation service provider Y. Drivers, thus, must increase their attention to these indicators. Drivers must wear helmets and jackets with corporate identity, clothing and trousers, closed shoes, pleasing to the eye and smell good and are prohibited from dressing inappropriately.
- c. The third indicator that needs improvement is the reliability and professionalism of drivers. Professionalism entails that drivers do not do other work simultaneously when delivering the customer and the drivers ask to cancel the order without clear confirmation to the passenger. This indicator falls into the quadrant with high priority and thus important to be improved. Analysis show that the drivers are not yet professional in doing their job despite the fact that the rule is listed in the SOP or Code of Ethics for the online transportation service provider Y. An appeal to drivers or partners not to make mistakes such as these is important to implement and be given severe and clear sanctions.
- d. Another indicator that needs to be considered is the ability to provide services quickly and correctly (informative in communication). That is, drivers need to quickly respond to orders and immediately comes to the customer pick-up location. Unlike the X company which has such policy in the SOP, Y's online transportation service provider does not enforce this kind of regulation on its drivers. In the SOP for theonline transportation provider Y, it is only stated that it is forbidden to take orders that take more than 30 minutes from the pick-up point. The condition causes partners or drivers to be unresponsive to process orders they have received and make customers wait. It is recommended that drivers are given a standard time to process their orders.

6. Conclusion

Based on the results of the above analysis and discussions of the data processing that has been carried out, conclusions are drawn to answer the research objectives. Online transportation service provider X only has 3 indicators that are below its competitors. The indicators include aspects in relation to drivers cooperation with customers, driver accuracy in performing their services, and drivers quick response to consumer complaints.

The performance provided by the online transportation service provider Y was analyzed to below its competitors, at 11 indicators, namely, the vehicle physical condition of the drivers, adequacy of equipment provided, care towards the wishes of consumers, maintenance of good relations with consumers, the ability to provide services quickly and correctly (informative in communication), reliability and professionalism of drivers, consistent service delivery (concise schedule for picking up and dropping off passengers), adequate knowledge and skills of drivers in carrying out their duties, the ability of drives to give confidence to consumers (timeliness, comfort, safety), and drivers expertise in running the vehicle properly.

With the CZIPA method, the determined improvement priorities are indicators that were placed in quadrant A, have a negative CZSQ value (performance below competitors), and have the smallest gap (largest negative value). In the online transportation service provider X, the priorities for improvements are in the aspects relating to cooperation of drivers with consumers, the accuracy of drivers in carrying out their services, and quick response of drivers upon consumer complaints. At the online transportation service provider Y, the priority for improvements are related to the fulfillment of equipment for drivers, reliability and professionalism of drivers, care towards consumer desires, and quick and correct provision of service (informative in communication).

References

- Chen, K. Y., Improving importance-performance analysis: the role of the zone of tolerance and competitor performance-the case of Taiwan's hot spring hotels, *Tourism Management*, vol. 40, pp. 260-272, 2014.
- Fachrurrozy, M., and Rachmawati, I., Analisis kualitas pelayanan pada GOJEK Bandung, *E-Proceeding of Management*, Bandung, vol. 4, no. 3, pp. 2506, 2017.
- Panjaitan, J. E., and Yuliati, A. L., Pengaruh kualitas pelayanan terhadap kepuasan pelanggan pada JNE cabang Bandung, *DeReMa Jurnal Manajemen*, vol. 11, no. 2, pp. 265-289, 2016.
- Parasurama, n A., Zeithaml, V. A., and Berry, L. L., Servqual: a multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, vol. 64, no. 1, pp. 12-40, 1988.
- Pujihastuti, I., Prinsip penulisan kuesioner penelitian, *Jurnal Agribisnis dan Pengembangan Wilayah*, vol. 2, no. 1, pp. 43-57, 2010.
- Riskayanti, N., and Sitohang, S., Pengaruh citra perusahaan, kepercayaan, dan harga terhadap loyalitas pengguna jasa, *Jurnal Ilmu dan Riset Manajemen*, vol. 5, no. 2, pp. 1-22, 2016.

- Suanders, E. S., The LibQUAL+ phenomenon: who judges quality?, *Reference and User Service Quarterly*, vol. 47, no. 1, pp. 21-24, 2007.
- Sudjana, *Metode Statistika*, 6th ed, Tarsito, Bandung, 2005.
- Sugiyono, *Metode Penelitian*, Alfabeta, Bandung, 2012.
- Taplin, and Ross, H., Competitive importance-performance analysis of an Australian wildlife park, *Tourism Management*, vol. 33, no. 1, pp. 29-37, 2012.
- Wober, K. W., *Benchmarking in Tourism and Hospitality Industries: The Selection of Benchmarking Partners*, CABI, Wallingford, 2002.