

Influence of Vaccine Drive Thru Service Quality on Perceived Value and Customer Satisfaction

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ABSTRACT

This type of research is research that uses a quantitative approach. By using this approach, significant results will be obtained for the variables to be examined by formulating a hypothesis to determine whether it is accepted or rejected. This research is intended to test the influence of vaccine drive thru service quality on perceived value and customer satisfaction. The purpose of this study is to analyze the influence of the quality of the physical environment, the quality of online registration, and the quality-of-service officers on perceived value and its consequences on customer satisfaction. The subjects in this study were drive thru vaccine participants at Muhammadiyah University of Yogyakarta. In this study, a sample of 200 respondents and the analysis tool used is the Structural Equation Model (SEM) through the AMOS program version 26. This study failed to prove the influence of the quality of the physical environment on customer perceived value in the Covid-19 vaccination drive thru service. This cannot be generalized to other types of services. Therefore, future research can examine types of services other than drive through so that they can be generalized to other types of services.

Keywords: service quality; customer perceived value; customer satisfaction; drive thru vaccine

INTRODUCTION

The Covid-19 pandemic has changed every activity in the community into a new habit. Community services must also adjust to Covid-19 health protocols. A well-known service that has been widely applied by various public services is the drive thru service. Drive thru services bring sellers and buyers together through a window in a short time, avoiding physical contact between the two (Suryanto, Handayani, & Riani, 2019). This can be applied to vaccination activities during the Covid-19 pandemic because it is able to reduce crowds in public places.

In the previous literature, Carrico et al. (2012) The United States became the first country to carry out drive-thru vaccinations more than 25 years ago in Kentucky (De Polo, et al., 2020). The Ministry of Health of the Republic of Indonesia together with Grab, one of the leading online applications in Southeast Asia, and Good Doctor as a private sector partner, carried out the first Drive-Thru and Walk-In Covid-19 vaccination in Indonesia and Southeast Asia operating in Bali on February 27, 2021 (Damayanti & Dewi, 2021). The Covid-19 drive-thru vaccine activity at universities in Yogyakarta was first organized by FKMK Universitas Gadjah Mada in collaboration with RSA UGM and RSUP Dr. Sardjito in July 2021 (Ika, 2021). After that, followed by the University of Muhammadiyah Yogyakarta together with the Yogyakarta Special Region Police held a Covid-19 drive-thru vaccine activity in September 2021 (Dwi, 2021).

The physical environment in Covid-19 vaccination activities is important to pay attention to because of the rules to comply with health protocols, thus vaccine

organizers need to manage the physical environment effectively (Anggrainie, Arifaina, & Damayanti, 2022). According to Zeithaml, Bitner, & Gremler's (2013) statement, the physical environment is all aspects of facilities provided by an organization or service company that include exterior attributes (example: information boards) and interior attributes (example: layout). The physical environment is also an important construct because it attracts customers, "customers use the physical environment in assessing the quality of a product or service" (Ha & Jang, 2012).

Service quality compares customers from current experience with services gained from previous experience (Parasuraman, Zeithaml, & Malhotra, 2005). If the service received by customers is as expected, then the quality of service is quite good. Conversely, if the service received is worse than expected, then the quality of service is also considered poor. In other words, if the quality of service can be met, then the service is said to be satisfactory (Ariani, 2015).

The implementation of vaccines needs to be regulated starting from online registration. The use of an online registration system can mark one's participation by going through the login procedure of the registration platform, helping officers to track registrants and allowing administrators to track and manage registrant records. Therefore, the concept was created to make the data collection system online, with Google Forms so that it can be accessed anywhere easily (Rahardja, Harahap, & Anjani, 2018). A customer's perception of their interaction experience in doing an online registration can affect their perception of the product as well as the attendant's service.

Thus, customers can attribute their experience in conducting online registration directly to the company (Nambisan & Watt, 2011).

Customer perception of service quality is a subjective evaluation of service experience, and customer expectations are the standard used to assess that service experience. The perceived quality of service of customers has a significant impact on customer perceived value (Pai, Lee, & Kang, 2021). Customer perceived value focuses on customers' perceptions between what they provide and what they get. Based on this, researchers have previously examined how perceived value affects satisfaction, suggesting that perceived value affects higher levels of satisfaction (Ryu, Lee, & Kim, 2012).

Satisfaction is a positive attitude formed by customers to the services provided. Customer satisfaction is the evaluation of consumers based on their overall experience (Özkan, Süer, Keser, & Kocakoç, 2019). Customer satisfaction is the success of a company to get a positive response. Conversely, if the customer is not satisfied, there will be a bad response and can also complain about the complaints obtained (Fauzi & Mandala, 2019). Customer satisfaction can be affected by a well-designed physical environment, as well as the quality of products and services offered by the service provider (Slack, et al., 2020).

Research conducted by Slack et al. (2020) identifies that customers use a combination of service quality dimensions in their perception of the customer's perceived value and that those dimensions significantly affect the customer's perceived value. The research also shows that the perceived value of customers has a positive influence on customer satisfaction. Meanwhile, research conducted by De Leon, Atienza, & Susilo (2020) shows that service quality has a significant effect on perceived value and customer satisfaction, but customer perceived value does not have a significant effect on customer satisfaction.

LITERATURE REVIEW

According to the American Society for Quality, quality is a characteristic of a product or service that can affect the ability of the product or service to meet or satisfy customer needs (Heizer, Render, & Munson, 2019). The definition is a customer-centric one. It can be said that the company has provided quality on each of its products or services can meet or exceed customer expectations (Kotler & Keller, 2016). Research on internal and external factors on quality assessment shows that external factors can be more important quality indicators for customers when internal factors are not available. Internal factors are attributes that are part of the product or service itself, while external factors are attributes that are related to the product or service but are not the product or service itself (Ha & Jang, 2012).

Service Quality has more quality attributes compared to product quality because there is high customer involvement (Thomas, 2016). Parasuraman, Zeithaml, &

Berry (2002) state five widely recognized dimensions of service quality. This dimension has been used in many service companies to measure quality performance. The five dimensions, namely;

- (1) **Tangibles** includes the physical appearance of service facilities, equipment, personnel, and communication materials. The ability of a company to show its existence to external parties.
- (2) **Reliability**, service reliability is different from product reliability because it relates to the service provider's ability to carry out the promised service reliably and accurately.
- (3) **Responsiveness** is the service provider's willingness to assist and be prompt in providing services. It can also be interpreted by the speed of services provided to consumers in the form of employee alacrity and consumer handling.
- (4) **Assurance** refers to the knowledge and courtesy of employees as well as their ability to instill a sense of trust and confidence in customers.
- (5) **Empathy**, the service company's willingness to provide care, individualized attention, and assistance to customers.

Physical Environment Quality

The physical environment is included in one of the dimensions of service quality, namely Tangibles (tangible). The quality of the physical environment can be described as a physical condition found around the workplace that can affect the perception of consumers and officers either directly or indirectly in carrying out all their duties and responsibilities (Ryu, Lee, & Kim, 2012). The quality of the physical environment plays an important role in influencing customer perception, as customers demand a high-quality physical environment for the price, they must pay (Wibisono, Senalasari, & Elliott-White, 2022). The quality of the physical environment is rarely evaluated, and there is a lack of knowledge in terms of how well the environment can meet a person's needs. This is partly due to the lack of valid and reliable instruments that can provide important information about environmental quality. The quality of the physical environment is easier to control and enhance, its influence should not be ignored but rather deliberately used to improve the well-being of visitors or, at least, not damage it. As visitors become more knowledgeable, and increasingly adopt consumer attitudes toward their health care, their expectations about quality can also grow (Taylor, 2011).

Online Registration Quality

E-ServQual is an overall customer evaluation and assessment of the excellence and quality of electronic services (Cho & Sagynov, 2015). One example of electronic services is the use of mobile services (online) in the service registration section. Good service in the registration section can give customers an impression of the quality of service in general (Anam & Hendikawati, 2014). The use of mobile services to overcome queuing problems in health services has grown widely. Some of them are the SMS registration system to be widely used

by the Indian community (Chimaladinne & Sonti, 2017) and the web-based registration system for hospital patients in China (Zhang, et al., 2014). In Indonesia, the use of mobile services to overcome queuing problems has been widely developed, such as the use of sms and online registration using android and web-based applications. The successful adoption of an information technology depends largely on user acceptance (Doleck, Bazalais, & Lemay, 2017).

Staff Service Quality

According to Munusamy, Chelliah, & Mun (2010) the quality of staff service can be defined as the difference between customer expectations and the service received. Service quality is briefly defined by how a company meets or exceeds customer expectations (Slack, et al., 2020). The researchers agree on the definition of service quality, saying that service delivery can align with, match, or override the wishes of buyers (Pakurár, Haddad, Nagy, Popp, & Oláh, 2019). So, it is known that in the service there is always an aspect of interaction between the consumer and the producer, although the parties involved are not always aware because the service is not a good, but an intangible process or activity.

Customer Perceived Value

The term loneliness or perceived value of the customer is associated with the relative comparison between the benefits and tradeoffs associated with the product or service offered (García-Fernández, et al., 2018). Only the customer who can evaluate a product or service can provide value or not and the concept of customer perceived value is considered very subjective and personal (Parasuraman, Zeithaml, & Berry, 2002). Therefore, if customers feel that the proportion between their sacrifice and experience with the product or services equal then the customer will feel treated fairly. The perceived value of customers is gaining attention because currently it is increasingly service-oriented rather than production (Wang & Teo, 2020).

Customer Satisfaction

In principle, a business has a goal to create satisfaction to its customers. Satisfaction is a person's feeling of pleasure or disappointment resulting from comparing the perceived performance of a product or service with expectations (Kotler & Keller, 2016). Customer satisfaction occurs if the actual quality of service exceeds the customer's perceived expectations. If the performance or experience falls short of expectations, then the customer is not satisfied. If it meets or exceeds expectations, then the customer is satisfied (Ataburo, Muntaka, & Quansah, 2017). All activities carried out by the company will ultimately be focused on the value provided by customers regarding perceived satisfaction (Andreas & Yuniati, 2016). Therefore, customer satisfaction/dissatisfaction is a response to his own experience with the service provider.

Research Gap

The following is a review of previous research that became a reference in the research Influence of Vaccine Drive Thru Service Quality on Perceived Value and Customer Satisfaction can be seen in table 1.

Table 1. Research Gap

No	Source	Research Results
1	Slack <i>et al.</i> (2020)	Demonstrate that the quality of food, the quality of the physical environment, and the quality of service of employees acting independently on the customer's perceived value are significant determinants of the customer's perceived value.
2	Demir <i>et al.</i> (2020)	Reveal that the quality of the e-service directly affects perceived value and satisfaction.
3	Ryu <i>et al.</i> (2012)	Demonstrate that the quality of the physical environment and food is a significant predictor of perceived customer value. In addition, the results reinforce that customer perceived value is indeed a significant determinant of customer satisfaction.
4	Puspita <i>et al.</i> (2018)	Shows that Solo Eye Hospital has done a good online registration plan on the implementation of goals, objectives, strategies, and policies.

METHOD

The population in this study was drive-thru vaccine participants at Universitas Muhammadiyah Yogyakarta. The sampling technique used is purposive sampling, which is a deliberate sampling technique, researchers can determine the sample taken due to certain considerations (Sekaran & Bougie, 2017). The criteria used in sampling were respondents who had registered online to take the drive-thru vaccine at Universitas Muhammadiyah Yogyakarta, had done the drive-thru vaccine at Universitas Muhammadiyah Yogyakarta, and had felt the atmosphere of the drive-thru.

The type of data in this study is primary data which is data obtained directly from respondents or data sources by researchers related to the variables studied (Sekaran & Bougie, 2017). The data collection technique used is through surveys with the distribution of questionnaires to respondents in the form of statements to respondents related to variables of physical environment quality, online registration quality, staff service quality, customer perceived value and customer satisfaction. The scale used is the Likert Scale, ranging from a scale of 1 (strongly disagree) to a scale of 7 (strongly agree).

The four hypotheses in this study were tested using multiple regression with the help of Structural Equation Modeling (SEM) through Analysis of Moment Structure (AMOS) software. AMOS is used in these studies because it is more effective for testing complex hypotheses as well as relationships between complex variables (Haryono & Wardoyo, 2015).

RESULT AND DISCUSSION

In this study, researchers managed to collect as many as 200 respondents who had met the criteria of respondents. The majority of respondents in this study were women

with a total of 105 people or 52.5% of 200 respondents. Based on 3 predetermined age groups, respondents who have done the drive-thru vaccine are mostly in the age group of 19-24 years with a total of 198 people or 99% of 200 respondents. The majority of respondents who took the drive-thru vaccine were students with a total of 193 people or 96.5% of 200 respondents. Respondents who used motorcycles in drive-thru vaccine activities dominated the survey results with a total of 149 people or 74.5%.

A Validity Test is proof that the instrument, technique, or process used for the concept actually measures the concept for which it was intended. Validity is a test of how well an instrument developed measures a particular concept it wants to measure (Sekaran & Bougie, 2017). Test validity in research using a program from the AMOS application, namely Confirmatory Factor Analysis (CFA) by looking at the results in the Regression Weight table. The research instrument is said to be valid if the loading factor value > 0.5 (Ghozali, 2017). The results of the validity test can be seen in table 2.

Table 2. Validity Test Result

Variable	Indicator	Loading Factor	Border	Conclusion
Physical Environment Quality	KF1	0,543	$> 0,50$	Valid
	KF2	0,568		
	KF3	0,664		
	KF4	0,799		
	KF5	0,550		
Online Registration Quality	KO1	0,636	$> 0,50$	Valid
	KO2	0,606		
	KO3	0,757		
	KO4	0,788		
Staff Service Quality	KL3	0,516	$> 0,50$	Valid
	KL4	0,596		
	KL5	0,854		
	KL6	0,776		
	KL7	0,712		
Customer Perceived Value	PN1	0,833	$> 0,50$	Valid
	PN2	0,717		
	PN3	0,751		
	PN4	0,661		
Customer Satisfaction	KP1	0,817	$> 0,50$	Valid
	KP2	0,849		
	KP3	0,772		

Based on table 2, valid results are obtained for all indicators or statement items. All indicators or statement items have a loading factor value of > 0.5 for the variables of physical environment quality, online registration quality, officer service quality, customer perceived value, and customer satisfaction.

A Validity Test is proof that the instrument, technique, or process used for the concept actually measures the concept for which it was intended. Validity is a test of how well an instrument developed measures a particular concept it wants to measure (Sekaran & Bougie, 2017).

Reliability tests are performed to prove the consistency and stability of measurement instruments. Reliability measures the degree to which the indicators of a latent construct are internally consistent with each other (Hair, Black, Babin, & Anderson, 2019). The reliability test in this study uses the Construct Reliability test assisted by

the Microsoft Excel application. A variable can be said to be reliable if the value of construct reliability ≥ 0.7 (Ghozali, 2017). The results of the reliability test showed that the variables in this study had good reliability, namely physical environment quality (0.765); online registration quality (0.792), staff service quality (0.824); customer perceived value (0.830); and customer satisfaction (0.854).

Converting path diagrams into structural equations or measurement model equations can be done on SEM through AMOS software can be seen in figure 1 and figure 2.

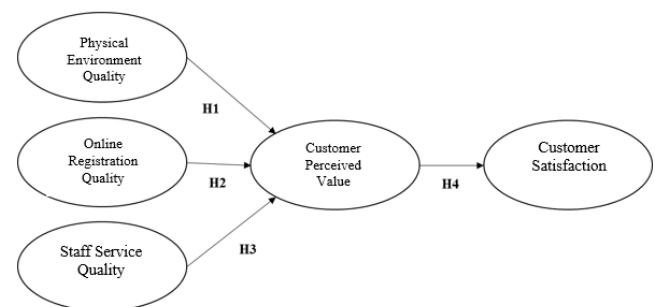


Figure 1. Research Model

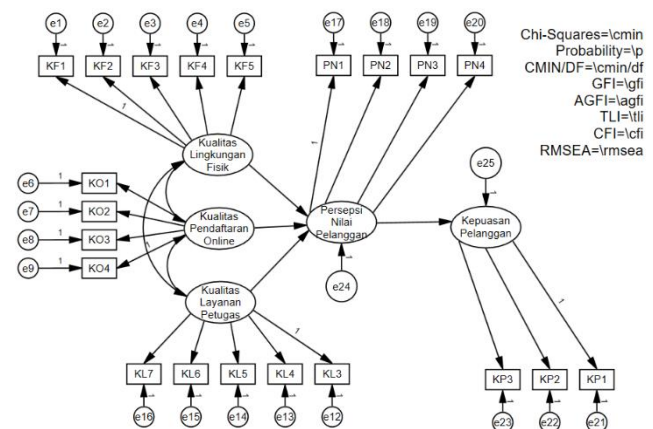


Figure 2. Structural Model Results

Looking at the Goodness of fit criteria can be done with a model conformity test. If it has met the criteria, it can be known that the model in the study is in accordance or fit with the data used in the study. The results of the Goodness of fit criteria assessment can be seen in table 3.

Table 3. Goodness of Fit Test Results

Goodness of fit parameters	Cut-off value	Research Model	Model
Chi-Squares	214,477	412,444	Not Fit
Probability	$\geq 0,05$	0	Not Fit
CMIN/DF	< 2	2,27	Not Fit
RMSEA	$< 0,08$	0,08	Fit
GFI	$\geq 0,90$	0,83	Marginal Fit
AGFI	$> 0,90$	0,79	Not Fit
TLI	$> 0,90$	0,85	Marginal Fit
CFI	$> 0,95$	0,87	Marginal Fit

Based on the results of the model conformity test in table

3, it can be concluded that the level of model suitability is quite good. The criteria that are not fit are found in the Chi-Squares, Probability, CMIN/DF, and AGFI sections because they have values below the acceptance standard. The RMSEA, GFI, TLI, and CFI indices produce values that are equal to and close to acceptance standards. Therefore, it can be concluded that the results of the Goodness of fit criteria test on the model used in this study show that the feasibility test of the model has met the recommended value requirements. Based on this because this study focuses on testing the hypothesis, the model is declared accepted because it has met at least one Goodness of fit criterion (Ghozali, 2017).

Estimation of the effect of the relationship of exogenous variables to endogenous based on the research model built can be seen from the results of Standardized Regression Weights using the Maximum Likelihood Estimation (MLE) technique. The provision of the critical ratio value (C.R.) has a value greater than 1.96 and has a probability value (P) smaller than $\alpha = 0.05$, then the exogenous variable has an effect on the endogenous variable or the hypothesis can be accepted. Meanwhile, if the value of C.R. < 1.96 and the value of $P > 0.05$, then the exogenous variable has no effect on the endogenous variable (Ghozali, 2017).

Table 4. Hypothesis Test Results

No	Hypothesis	H	C.R.	P	Information
1	The quality of the Physical Environment has a significant positive effect on the Customers Perceived Value	H1	-0,109	0,913	H1 Not Supported
2	The quality of Online Registration has a significant positive effect on Customers Perceived Value	H2	4,588	0,000	H2 Supported
3	The quality of Staff Service has a significant positive effect on Customers Perceived Value	H3	4,359	0,000	H3 Supported
4	Customers Perceived Value has a significant positive effect on Customer Satisfaction	H4	8,479	0,000	H4 Supported

Based on table 4 in the hypothesis 1, namely the quality of the physical environment on customer perceived value, the results of C.R. of -0.109 and P of 0.913. Based on these results, the first hypothesis is not supported. This is because the values C.R. = -0.109 < 1.96 are not qualified and the values $P = 0.913 > 0.05$ are also not qualified. Therefore, hypothesis 1 (H1) which states that the quality of the physical environment has a significant positive effect on customer perceived value is not supported. The results of testing hypothesis 1 in this study are in line with research conducted by Oh, Yoo, & Lee (2019) that the quality of the physical environment has no significant effect on customer perceived value. Meanwhile, these findings are not in line with research conducted by Slack et al. (2020) that the quality of the physical environment is a significant determinant of the customer perceived value.

Part of hypothesis 2, namely the quality of online registrations on customer perceived value, showed a C.R. result of 4.588 and P of 0.000. Based on these results, the second hypothesis is supported. This is because the value of C.R. = 4.588 > 1.96 is qualified and the value of $P = 0.000 < 0.05$ is qualified. The results of testing hypothesis 2 (H2) which states that the quality of online registration has a significant positive effect on customer perceived value are supported. The results of hypothesis 2 testing in this study are in line with research conducted by Puspita et al. (2018) which shows that the implementation of online registration well can increase user convenience and provide services with optimal standards. Not only that, the implementation of online registration can also speed up vaccine services because participants have been registered online so there is no need to queue to register offline. Therefore, the implementation of good online registration can affect the perceived value of drive-thru vaccine participants.

Hypothesis 3, namely the quality of staff service on customer perceived value, shows a C.R. result of 4.359 and P of 0.000. Based on these results, the third hypothesis is supported. This is because the value of C.R. = 4.359 > 1.96 is qualified and the value of $P = 0.000 < 0.05$ is qualified. Therefore, hypothesis 3 (H3) which states that the quality of staff service has a significant positive effect on customer perceived value is supported. The results of testing hypothesis 3 in this study are in line with research conducted by Demir et al. (2020) that the quality of attendant service directly affects the perceived value of customers.

Part of hypothesis 4, namely the customer perceived value to customer satisfaction, shows a C.R. result of 8.479 and P of 0.000. Based on these results, the second hypothesis is supported. This is because the value of C.R. = 8.479 > 1.96 is qualified and the value of $P = 0.000 < 0.05$ is qualified. Based on the results of hypothesis 4 (H4) testing which states that the customer perceived value has a significant positive effect on customer satisfaction is supported. This is in line with research conducted by Ryu et al. (2012) that customer perceived value is a significant determinant of customer satisfaction.

CONCLUSION AND RECOMMENDATION

The conclusions in this study are based on the results of data analysis and hypothesis testing that has been carried out using Structural Equation Modeling (SEM) through the Analysis of Moment Structure (AMOS) software version 26. Testing 4 (four) hypotheses with the object of drive-thru vaccine participants at Universitas Muhammadiyah Yogyakarta, which includes the quality of the physical environment against customer perceived value, the quality of online registration against customer perceived value, the quality of staff service on customer perceived value, and customer perceived value on customer satisfaction.

The findings indicate that the quality of the physical environment does not significantly impact customer perceived value. Participants in drive-thru vaccine

activities prioritize factors like vaccine effectiveness and safety over the physical environment. Online registration quality positively influences customer perceived value, suggesting that a well-structured and user-friendly registration process enhances participants perception of value.

The study reveals that the quality of staff service has a significant positive effect on customer perceived value. Good service, characterized by helpfulness, appropriateness, and a sense of calm, security and comfort contributes to participants positive perception.

Ultimately, the research establishes that customer perceived value significantly influences customer satisfaction in drive-thru vaccine activities. The satisfaction of participants is linked to their positive

perception of value, shaped by the quality of online registration and staff service.

This research can contribute to health institutions or organizers of drive-thru vaccine activities. The quality of the physical environment is not a major factor in drive-thru vaccine activities, so in the future health institutions or drive-thru vaccine activity organizers can focus more on the quality of online registration and the quality of service for vaccinators. Things that can be considered in the quality of service of vaccinators are providing services appropriately, willing to help vaccine participants, and providing a sense of calm, safety, and comfort during the drive-thru vaccine activity. Meanwhile, the quality of online registration can be considered things such as making it easier for participants to fill out Google Forms, well-structured questions, and easy-to-understand questions on Google Forms.

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