Journal of Sustainable Economic and Business (JOSEB)

Vol. 2 No. 1 January 2025: 38-51
ISSN (Online): 3063-0207
https://journal.arepublisher.com/index.php/joseb

Developing Operational Performance Through Customer Engagement, e-Ticketing and Customer Satisfaction: a Mediation Perspective

Agung Satrya Adi Pratama[1*]; Dewi Nusraningrum[2)]

[1)] *agung.satryapratama@gmail.com, Universitas Mercu Buana, Indonesia*
[2)] *dewinusraningrum@mercubuana.ac.id, Universitas Mercu Buana, Indonesia*

(*) Corresponding Author

ABSTRACT

Objectives: *this study aims to explore the role of customer satisfaction as a mediator for the influence of customer engagement and e-ticketing on operational performance.*
Methodology: *This study uses a causal design with a survey method conducted by distributing Likert scale questionnaires: customer engagement, e-ticketing, customer satisfaction, and operational performance to 170 service users (ship passengers) at Merak Port. Data analysis using structural equation modeling based on partial least squares (SEM-PLS) supported by descriptive and correlational analysis.*
Findings: *The results showed that customer engagement, e-ticketing, and customer satisfaction have a significant effect on port operational performance; customer engagement and e-ticketing have a significant effect on ship passenger customer satisfaction, and customer satisfaction mediates the effect of customer engagement and e-ticketing on port operational performance.*
Conclusion: *The model's novelty of the effect of customer engagement and e-ticketing on port operational performance with customer satisfaction mediation. This model deserves critical and in-depth discussion before being adopted or adapted by researchers and practitioners in the future.*

Keywords*: Customer Engagement; e-Ticketing; Customer Satisfaction; Operational Performance.*

Article Doi: https://doi.org/10.70550/joseb.v2i1.59

How to Cite: Pratama, A. S. A., & Nusraningrum, D. . (2025). Developing Operational Performance Through Customer Engagement, e-Ticketing and Customer Satisfaction: a Mediation Perspective. *Journal of Sustainable Economic and Business*, *2*(1), 38-51. https://doi.org/10.70550/joseb.v2i1.59

Submitted: 30-12-2024	Revised: 22-01-2025	Accepted: 28-01-2025

INTRODUCTION

Operational performance is vital to an organization's survival, competitiveness, and growth. Therefore, studying organizational operational performance is crucial, including port operational performance, especially when operational performance is inadequate or has not reached the set target. For example, the operational performance of the Merak Port, managed by PT ASDP Indonesia Ferry (Persero), helped achieve the company's net profit of 92% of the target. However, this achievement has not reached the optimal 100%. Under these conditions, the organization's (company's) operational performance deserves to be questioned and studied scientifically, especially from the perspective of customer engagement, e-ticketing, and

customer satisfaction. Studies by Binsaeed et al. (2023) show that organizational performance can be influenced by customer engagement, which is the emotional connection and involvement of customers with a brand, product, or service that is characterized by attention, enthusiasm, interaction, identification, and alignment. Other research results prove that e-ticketing contributes to organizational performance (Macharia & Oluoch, 2020). E-ticketing is an electronic document of online sales as proof of confirmation, delivery, or reservation of an activity. In addition, the results of research by Zakari and Ibrahim (2021) and Ying et al. (2021) show that customer satisfaction positively impacts organizational performance. Customer satisfaction is a psychological condition that reflects the extent to which the company's products or services meet or exceed customer expectations, indicating the fulfillment of expectations, the absence of subjective uncertainty, and excellent performance results. Additionlly, other empirical evidence indicates that customer satisfaction is influenced by customer engagement (Tuti & Sulistia, 2022) and e-ticketing (Mandalia & Khairunnisa, 2023). Some of this empirical evidence indicates that customer satisfaction can mediate customer engagement and e-ticketing on organizational operational performance. In fact, in the context of human resources, studies by Arifin (2024) and Wardiansyah et al. (2024) show that engagement affects performance with satisfaction mediation. However, research that specifically investigates the effect of e-ticketing on organizational operational performance through customer satisfaction is still challenging to find. This opens up opportunities for new research. Based on this urgency, this study aims to explore the effect of customer engagement and e-ticketing on operational performance through the mediation mechanism of customer satisfaction.

LITERATURE REVIEW

Customer Engagement and Operational Performance

Operational performance is related to the effectiveness of each resource used by the company, such as capital, raw materials, technology, and others. This relates to the extent to which the use is maximized to achieve profit or its vision and mission (Fauzi & Indrawan, 2023). In a green business context, green operation management for green operational performance elevates green business and products (Nusraningrum, et al., 2024). Operational performance is related to the quality of activities linked to the flow and movement of goods, from raw materials to finished goods, to the hands of end consumers (Romadoni, 2022). Solikin et al. (2024) identified organizational performance measurements, including through indicators: service quality, flexibility, resource utilization, and innovation. In organizational operations, customer engagement can influence these indicators, among others. The results of recent studies conducted by Binsaeed et al. (2023) and Elvera and Meco (2024) show that customer engagement significantly affects organizational operational performance. Customer engagement refers to customers' psychological and behavioral commitment to a business organization. It involves active participation, attachment, and connection of customers with the company's products, services, and brands. Engaged customers interact with the company, provide feedback, share information, and demonstrate loyalty (Binsaeed et al., 2023). Customer engagement includes activities such as providing feedback, participating in loyalty programs, sharing experiences on social media, and actively seeking out the brand's products or services (Fauziyah et al., 2023). Customer engagement can be measured through indicators: attention, enthusiasm, interaction, identification, and absorption (So et al., 2014). When in solid condition, these indicators can stimulate the organization's operational performance. Thus, the first hypothesis (H_1) can be formulated as follows:

H_1: Customer engagement directly affects operational performance.

E-ticketing and Operational Performance

Empirically, e-ticketing also affects operational performance. Studies conducted by Kushner (2020), Tripathi et al. (2022), Chiu et al. (2022), and Li et al. (2022) in several countries and various industrial groups show that e-ticketing has a significant effect on operational performance. Nusraningrum et al. (2021) also indicated that process management, like e-ticketing, impacts operational performance. In reality, internet technology has brought many benefits to society in various areas of life, including e-tickets that can be purchased online (Rakhmah & Nisa, 2023). E-ticketing provides many benefits that can be used as measurement indicators, including time-saving, operation, integration, cloud database, and real-time data (Thu et al., 2019; Elliott, 2020; Sturgill et al., 2019; Fuller et al., 2019; Sharma & Singh, 2021). If realized optimally by the organization, these metrics may promote improved operational performance. Thus, the second hypothesis can be promoted as follows:

H_2: E-ticketing directly affects operational performance.

Customer Satisfaction and Operational Performance

Organizational operational performance can also be influenced by customer satisfaction. The results of research conducted by Zakari and Ibrahim (2021), Ying et al (2021), and Cheng (2024) prove that customer satisfaction is a significant predictor of organizational operational performance. Conceptually, customer satisfaction is an emotional response to evaluating the pleasure of consuming a good or service (Daengs & Istanti, 2022). In addition, consumer satisfaction is defined as a person's reaction to using a product or service, such as feelings of satisfaction or dissatisfaction (Indrasari, 2019). Customer satisfaction is a key driver of business success in any industry. By prioritizing customer satisfaction and continually striving to meet customer expectations, companies can build strong relationships, foster loyalty, and ultimately improve their organizational performance (Harzaviona & Syah, 2020). According to Kotler and Keller (2020), three aspects shape customer satisfaction, namely conformity to expectations, interest in revisiting, and willingness to recommend. Customer satisfaction is the key to retaining customers, supported by several indicators, such as expectations, subjective disconfirmation, and performance outcomes (Oliver, 2019). When the organization can realize these indicators optimally and consistently, it can trigger an increase in the organization's operational performance. Therefore, the third hypothesis proposes the following:

H_3: Customer satisfaction directly affects operational performance.

Customer Engagement and Customer Satisfaction

Empirically, customer satisfaction not only affects the organization's operational performance but is also influenced by customer engagement. The results of the latest research from Kwee (2024) prove that customer engagement positively and significantly affects customer satisfaction. Other studies also reveal the positive contribution of customer engagement to customer satisfaction (Sharma & Singh, 2021), (Thakur, 2019), (Tuti & Sulistia, 2022). This means that customer engagement is a good predictor of customer satisfaction, so if the capacity of customer engagement is increased, it will positively impact customer satisfaction. Thus, the fourth hypothesis promotes as follows:

H_4: Customer engagement directly affects customer satisfaction.

E-ticketing and Customer Satisfaction

Customer satisfaction is also influenced by e-ticketing. The results of research by Wicaksono et al. (2022) and Noerlina & Meiryani (2023) show that e-ticketing is positively correlated with customer satisfaction. Studies by Banu (2019) and Ferdous et al. (2021) also prove that e-ticketing positively contributes to customer satisfaction. This indicates that e-ticketing is an antecedent to customer satisfaction, so if e-ticketing can be adequately realized, it can have implications for increasing customer satisfaction. Thus, the fifth hypothesis is formulated as follows:

H_5: E-ticketing has a direct effect on customer satisfaction.

Mediation of Customer Satisfaction

Several previous studies above indicate the role of customer satisfaction as a mediator for the causal relationship between customer engagement and e-ticketing with organizational operational performance. The results of research by Abadi (2024), Arifin (2024), and Wardiansyah et al. (2024) also show an important part of satisfaction in mediating the influence of engagement on performance. However, research on the influence of e-ticketing on organizational operational performance through customer satisfaction is still challenging to find, so it is urgent to investigate scientifically. With this consideration, it can be hypothesized:

H_6: Customer engagement indirectly affects operational performance through customer satisfaction.

H_7: E-ticketing indirectly affects operational performance through customer satisfaction.

METHOD

Research Design

This study uses a causal design with a survey method. This method focuses on research on large and small populations, using carefully selected samples to determine relative events, distributions, and correlations between variables (Kerlinger, in Widodo, 2021)). In this study, these variables include customer engagement and e-ticketing as exogenous variables, customer satisfaction as a mediator variable and also endogenous variable 1, and operational performance as endogenous variable 2.

Measurement

The questionnaire used to quantify the study's variables was a Likert scale with five possible responses, ranging from strongly disagree (score 1) to strongly agree (score 5). The questionnaire was designed in Google Form format and shared via Whatsapp group networks and email. The questionnaire for each variable was developed based on theoretical indicators from experts. For customer engagement variables, the indicators include attention, enthusiasm, interaction, identification, and absorption (So et al., 2014). E-ticketing involves time savings, simplifying operations, technology integration, valuable databases, and real-time data (Elliott, 2020; Sturgill et al., 2019; Fuller et al., 2019). Customer satisfaction: Expectations are met, there is no subjective uncertainty, and excellent performance results (Oliver, 2019). Operational performance includes service quality, flexibility, resource utilization, and innovation (Solikin et al., 2024). Before being used for research, the questionnaire statement items were first tested

for validity and reliability using 30 samples. The results of the validity test of the customer engagement questionnaire are 10 valid items with a correlation coefficient range of 0.503-809. Likewise, for e-ticketing, 10 items are valid with a correlation coefficient range of 0.503-809. For customer satisfaction, six items are valid with a correlation coefficient range of 0.645-823, then for operational performance, 11 items are valid with a correlation coefficient range of 0.406-790. All valid items have a correlation coefficient> r table for n = 30 (0.361). Meanwhile, the reliability test results of the customer engagement, e-ticketing, customer satisfaction, and operational performance questionnaires each have Alpha coefficient values of 0.870, 0.834, 0.829, and 0.827. All Alpha coefficients are > 0.7, so they are reliable (Widodo, 2021). Thus, all questionnaires as research instruments are valid and reliable, so they are suitable for use in collecting research data.

Participants

The population of this study were users of ferry services (ship passengers) who used the services of Merak Port, Banten Province. Because the number of passengers is challenging to know and constantly changes daily, this study used convenience sampling techniques to determine the sample. Convenience sampling is a method of collecting data from members of the population who are willing to be research data sources (Sekaran, 2019). With these conditions, the research sample (participants) was determined based on the formulation of Hair et al. (2021) that a good sample for research using structural equation modeling analysis based on Partial Least Square (SEM-PLS) is 5 to 10 times the number of indicators for all research variables. Therefore, the number of indicators in this study is 17, and the number of possible samples is 85-170. With this reference, the sample for this study was set at 170 people (10x17). The majority of them (59%) are male, aged ≤ 25 years (52%), have a high school education/equivalent (49%), are married (58%), are students (44%), and have the following occupations: employees (27%), civil servants (14%), and professionals (8%).

Data Analysis

The research data analysis used descriptive and correlational statistics and SEM-PLS analysis to test the hypothesis and research model. Descriptive and correlational analysis used SPSS version 26 software, while SEM-PLS analysis used SmartPLS 4.0.

RESULTS AND DISCUSSION

Results

As presented in Table 1, the mean values from the highest to the lowest are operational performance (46.5240), E-ticketing (44.459), customer engagement (36.759), and customer satisfaction (24.488). While for the standard deviation (SD), customer engagement (9.863), operational performance (7.228), e-ticketing (6.122), and customer satisfaction (4.964). The mean value is generally greater than the SD value. This empirical fact shows the appropriate data representation (Widodo et al., 2024). In addition, the results of the correlation coefficients between variables from the largest to the smallest, respectively, are customer satisfaction with operational performance (0.758), e-ticketing with operational performance (0.743), e-ticketing with customer satisfaction (0.598), customer engagement with customer satisfaction (0.454), and customer engagement with operational performance (0.449). These results show a significant reciprocal relationship at p <.01. However, all correlation coefficient values <0.9 indicate no multicollinearity symptoms in this study (Sulistiasih & Widodo, 2025).

Tabel 1. Descriptive and correlational analysis results

Variabel	Mean	SD	1	2	3	4
Customer engagement (X_1)	36.759	9.863	1.00			
E-ticketing (X_2)	44.459	6.122	0.240**	1.00		
Customer satisfaction (Y_1)	24.488	4.964	0.454**	0.598**	1.00	
Operational performance (Y_2)	46.524	7.228	0.449**	0.743**	0.758**	1.00

** Significant at p = 0.01.

As manifest and latent variables, indicators' validity and reliability are assessed using the outer model measurement test. The software SmartPLS version 4 was used to conduct the outer model test. Based on the association between the indicator and concept scores, the measuring model with reflecting indicators is evaluated for convergent validity. Generally speaking, the loading factor value should be larger than 0.7 for confirmatory research, between 0.6 and 0.7 for explanatory research, and the Average Variance Extracted (AVE) value should be greater than 0.5 (Hair et al., 2021). Overall, the loading factor value for each indicator for all variables (customer engagement, e-ticketing, customer satisfaction, and operational performance) meets the convergent validity requirements because it is greater than 0.7 with a range of 0.709-0.953. Meanwhile, the AVE value for all variables is> 0.5, with a range of 0.721-0.897. Convergent validity is demonstrated to be met by all latent variables in the estimated model.

Based on empirical criteria, Table 2 displays the findings of discriminant validity, which assesses how much a construct (variable) differs from other constructs. The correlation values obtained indicate the indicator's correlation value with its construct is higher than its correlation value with other constructs, indicating good discriminant validity.

Tabel 2. Cross loadings results

Indicators	Customer Engagement (X_1)	E-ticketing (X_2)	Customer Satisfaction (Y_1)	Operational Performance (Y_2)
X1.1	**0.819**	0.163	0.394	0.360
X1.2	**0.886**	0.215	0.472	0.429
X1.3	**0.879**	0.205	0.344	0.342
X1.4	**0.908**	0.126	0.369	0.368
X1.5	**0.742**	0.352	0.345	0.434
X2.1	0.172	**0.833**	0.518	0.601
X2.2	0.191	**0.896**	0.618	0.669
X2.3	0.211	**0.900**	0.509	0.643
X2.4	0.254	**0.831**	0.442	0.614
X2.5	0.265	**0.846**	0.489	0.671
Y1.1	0.444	0.569	**0.940**	0.722
Y1.2	0.420	0.590	**0.953**	0.722
Y1.3	0.440	0.549	**0.948**	0.714
Y2.1	0.472	0.652	0.749	**0.935**
Y2.2	0.251	0.497	0.369	**0.709**
Y2.3	0.365	0.712	0.631	**0.891**
Y2.4	0.472	0.706	0.809	**0.932**

Furthermore, if the square root of AVE (Fornell-Lacker) is higher than the correlation value of the latent variable with every other latent variable, discriminant validity can be accepted (Hair et al., 2021). Table 3 displays the shading impact for each latent variable's correlation value that

was generated during the measurement model test. At the variable level, discriminant validity is assessed using the Fornell-Lacker criterion method. The results show the root of AVE customer Engagement = 0.849. e-ticketing = 0.862. customer satisfaction = 0.947. and operational performance = 0.872. Each root of AVE is higher than the correlation of other variables, so the discriminant validity evaluation based on the Fornell-Lacker criterion can be accepted.

Tabel 3. Fornell-Lacker values for discriminant validity

Variabel	Customer Engagement	E-ticketing	Customer Satisfaction	Operational Performance
Customer Engagement	**0.849**			
E-ticketing	0.253	**0.862**		
Customer Satisfaction	0.459	0.601	**0.947**	
Operational performance	0.460	0.743	0.760	**0.872**

Reliability testing was conducted using the Cronbach's Alpha (CA) and Composite Reliability (CR) formulae. The general guideline for evaluating concept reliability in confirmatory research is > 0.7 (Ghozali & Latan, 2019). The CA and CR results for all variables are presented in Table 5. The CA and CR values of all latent variables are > 0.70. Consequently, all of the manifest variables (indicators) used to measure the latent variables in the estimated model are trustworthy.

Tabel 4. Reliability testing results

Variables	CA	CR (rho_a)	CR (rho_c)	Cutt-off	Keterangan
Customer Engagement (X1)	0.902	0.907	0.928	0.700	Reliabel
E-ticketing (X2)	0.913	0.916	0.935		Reliabel
Customer Satisfaction (Y1)	0.942	0.943	0.963		Reliabel
Operational performance (Y2)	0.892	0.927	0.926		Reliabel

The R-squared value (R2) of each endogenous variable (construct) can be used to determine the predictive capacity of the structural model (Ghozali & Latan, 2019). The R^2 value for customer satisfaction (Y_1) is 0.462. This finding shows that 46.2% of customer satisfaction is influenced or determined by customer engagement and e-ticketing, while the rest (53.8%) is influenced/determined by other variables/factors that were not observed/studied in this study. The R_2 value for operational performance (Y_2) is 0.724. This finding explains that 72.4% of operational performance is influenced/determined by customer engagement, e-ticketing, and customer satisfaction, while the rest (27.6%) is influenced/determined by other factors/variables that were not observed/studied in this study.

Three test models were used to evaluate the fit model in this investigation. Specifically, chi-square and SRMR (standardized root mean square residual) and the NFI, or normal fit index. The NFI value criteria range from 0 - 1. If it is close to 1, it fits. Then, the Chi-square value is more than 0.9 (Chi2 > 0.9) and SRMR ≤ 0.1 (Hair et al., 2021). The results of Chi-square, SRMR, and NFI are presented in Table 6. The study's results indicate that the model in this study is a good fit because the SRMR value (0.071) < 0.1. Chi-square (477.721) > 0.9, and NFI (0.828) is close to 1.

The study's results also found a customer satisfaction equation model: $Y1 = 0.328X_1 + 0.518X_2 + \zeta1$. This model shows that customer engagement (X_1) and e-ticketing (X_2) have a positive

effect on customer satisfaction (Y_1), with a path coefficient value of 0.328 for customer engagement and 0.518 for e-ticketing. It means that improving customer engagement and e-ticketing can increase customer satisfaction. While the operational performance model: $Y_2 = 0.154X_1 + 0.454X_2 + 0.416Y_1 + \zeta 1$. This model shows that customer engagement (X_1), e-ticketing (X_2), and customer satisfaction (Y_1) have a positive effect on operational performance (Y_2), with a path coefficient value = 0.154 for customer engagement, 0.454 for e-ticketing, and 0.416 for customer satisfaction. It indicates that improving customer engagement, e-ticketing, and customer satisfaction can improve operational performance.

The hypothesis test results, including the path coefficient and t-statistic values , are visualized in Figure 1 and summarized in Table 5. All hypotheses, from H1 to H7, are proven (significant) with the calculated t value > t table at $\alpha = 0.01$. In detail, customer engagement, e-ticketing, and customer satisfaction positively and significantly affect operational performance with path coefficients of 0.154, 0.454, and 0.416. Then, customer engagement and e-ticketing positively and significantly affect customer satisfaction, with path coefficients of 0.328 and 0.518. In addition, customer satisfaction mediates the effect of customer engagement and e-ticketing on operational performance, with path coefficients of 0.137 and 0.215. All path coefficients are positive. It shows that improving customer engagement and e-ticketing can enhance customer satisfaction and operational performance. E-ticketing has a more decisive influence on operational performance than others. E-ticketing also contributes more to customer satisfaction, so its indirect influence on operational performance through customer satisfaction is also stronger. As a consequence, e-ticketing needs to be given more attention than others.

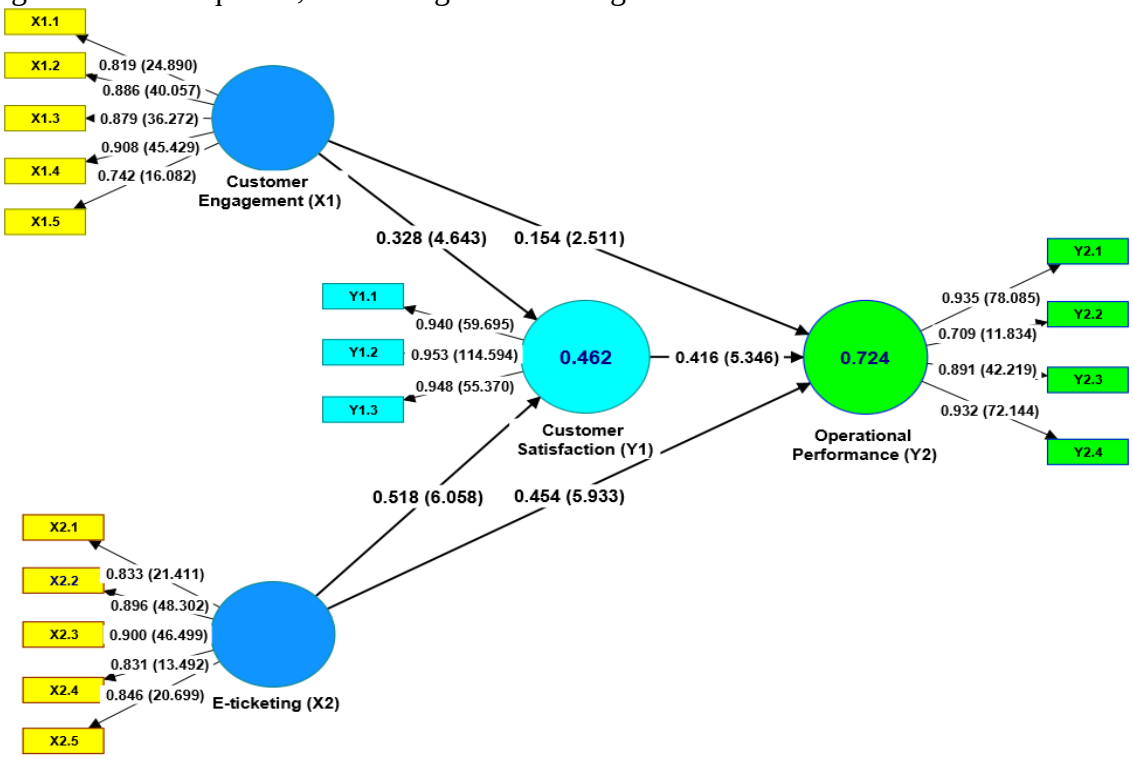

Figure 1. Path coefficient and t-statistic values

Tabel 5. Hypothesis testing results

Hypothesis	Path Coefficient	T-statistics	p- values	Decision
H_1: Customer Engagement → Operational performance	0.154**	2.511	0.012	Significant
H_2: E-ticketing → Operational performance	0.454**	5.933	0.000	Significant
H_3: Customer Satisfaction → Operational performance	0.416**	5.346	0.000	Significant
H_4: Customer Engagement→ Customer Satisfaction	0.328**	4.643	0.000	Significant
H_5: E-ticketing → Customer Satisfaction	0.518**	6.058	0.000	Significant
H_6: Customer Engagement → Customer Satisfaction → Operational performance	0.137**	4.114	0.000	Significant
H_7: E-ticketing → Customer Satisfaction → Operational performance	0.215**	3.550	0.000	Significant

** Significant at p = 0.01

Discussion

The results of this study indicate that customer engagement has a positive and significant effect on the operational performance. This means that customer engagement is an important predictor of operational performance. This finding is inseparable from the existence of customer engagement as an emotional relationship and customer involvement with a brand, product, or service that is reflected in attention, enthusiasm, interaction, identification, and absorption (So et al., 2014). When customer engagement between employees and port management is solid and sustainable, it can stimulate an increase in port operational performance as the quality of implementation of activities related to moving goods or people to their destination through selection activities, design, renewal, operation and supervision, which is manifested in service quality, flexibility, resource utilization, and service innovation (Solikin et al., 2024). This conclusion supports and is consistent with the findings of earlier research by Binsaeed et al. (2023), which prove that customer engagement has a positive and significant effect on operational performance.

The results of this study also indicate that e-ticketing has a positive and significant effect on the operational performance. This means that e-ticketing is a crucial antecedent to the operational performance. This empirical fact is related to the vitality of E-ticketing as an electronic online sales document that represents proof of confirmation, delivery, or reservation of an activity. In practice, e-ticketing can save time and simplify operations, technology integration, valuable databases, and real-time data (Elliott, 2020; Sturgill et al., 2019); Fuller et al., 2019). When all these aspects can be realized by the business unit properly, it can make a positive contribution to improving the operational performance of the port as the quality of implementation of activities related to the movement of goods or people to their destination through the activities of selection, design, renewal, operation, and supervision, which are manifested in service quality, flexibility, resource utilization, and service innovation (Solikin et al., 2024). This finding confirms previous research results that customer engagement positively and significantly affects operational performance (Macharia & Oluoch, 2020).

In addition, the results of this study prove that customer satisfaction has a positive and significant effect on operational performance. This indicates that customer satisfaction is an essential determinant of operational performance. This empirical evidence cannot be separated from the existence of customer satisfaction as a psychological condition that reflects the extent to which a company's products or services meet or exceed customer expectations, which are manifested in aspects of fulfilled expectations, no subjective uncertainty, and excellent

performance results (Oliver, 2019). When ship passengers possess these aspects, it can stimulate an increase in port operational performance as the quality of implementation of activities related to the movement of goods or people to their destination through selection, design, renewal, operation, and supervision activities, which are manifested in service quality, flexibility, resource utilization, and service innovation (Solikin et al., 2024). These findings support previous studies by Zakari and Ibrahim (2021) and Ying et al. (2021) that claim customer satisfaction affects operational performance.

This study also found that customer engagement positively and significantly affects passenger customer satisfaction. It means that customer engagement is an important predisposition for passenger customer satisfaction. This finding is inseparable from customer engagement as an emotional relationship and customer involvement with a brand, product, or service reflected in attention, enthusiasm, interaction, identification, and absorption (So et al., 2014). When customer engagement between employees and port management is solid and sustainable, it can stimulate an increase in customer satisfaction as a psychological condition that reflects the extent to which the company's products or services meet or exceed customer expectations, which are manifested in aspects of meeting expectations, no subjective uncertainty, and excellent performance results (Oliver, 2019). This observation supports and aligns with the findings of other studies carried out by Tuti and Sulistia (2022), it demonstrating the beneficial and substantial impact that customer engangement has on customer satisfaction.

This study also reveals empirical facts that e-ticketing positively and significantly affects passenger customer satisfaction. It indicates that e-ticketing is an important contributor to passenger customer satisfaction. This empirical fact confirms the vital role of e-ticketing as an electronic online sales document that represents proof of confirmation, delivery, or reservation of activity, which in practice can save time, simplify operations, technology integration, valuable databases, and real-time data (Elliott, 2020; Fuller et al., 2019; Sturgill et al., 2019). So it is not surprising that when all these aspects can be realized by the business unit properly, it can then have a positive impact on increasing a psychological condition that reflects the extent to which the company's products or services meet or exceed customer expectations which are manifested in aspects of meeting expectations, no subjective uncertainty, and excellent performance results (Oliver, 2019). These findings align with and confirm previous studies which prove that e-ticketing has a positive and significant effect on customer satisfaction (Mandalia & Khairunnisa, 2023).

In addition, the findings of this study also show that customer engagement has an indirect effect on the operational performance in terms of the mediation of customer satisfaction. These results indicate the crucial role of customer satisfaction in mediating the relationship between customer engagement and port operational performance. It shows that when customer engagement between passengers and port management is solid, it can increase passenger customer satisfaction and, in turn, positively impact port operational performance. This evidence is in line with previous studies that show that customer engagement affects operational performance with the mediation of customer satisfaction (Abadi, 2024; Arifin, 2024; Wardiansyah et al., 2024).

This study also show that e-ticketing indirectly affects the operational performance through customer satisfaction. These results indicate the mediating role of customer satisfaction in the context of the causal relationship between e-ticketing and port operational performance. It shows that when e-ticketing can be implemented properly by port management, it can increase passenger customer satisfaction and have implications for improving port operational

performance. This finding is consistent with previous studies that e-ticketing affects customer satisfaction (Mandalia & Khairunnisa, 2023), and customer satisfaction impacts operational performance (Ying et al., 2021; Zakari & Ibrahim, 2021).

Finally, the results of this study found a new empirical model regarding the influence of customer engagement and e-ticketing on operational performance with the mediation of fit customer satisfaction. This model is a novelty of this study because no similar theoretical model has been found before. The model has practical implications for port management, particularly at Merak Port, in addition to offering theoretical contributions to management research under such circumstances.

CONCLUSION

Operational performance is vital for an organization, so this study explores the role of customer satisfaction in mediating the influence of customer engagement and e-ticketing on operational performance. According to the study's findings, customer engagement, e-ticketing, and customer satisfaction have a significant effect on operational performance, customer engagement and e-ticketing has a significant effect on customer satisfaction, and customer satisfaction mediates the influence of customer engagement and e-ticketing on operational performance. These findings are not only consistent and affirm previous studies that are used as the basis for building theoretical models and research hypotheses but also confirm the novelty of the model of the influence of customer engagement and e-ticketing on port operational performance with customer satisfaction mediation.

REFERENCES

Abadi, A. F. (2024). Pengaruh employee engagement terhadap kinerja karyawan melalui kepuasan kerja sebagai variabel mediasi [The influence of employee engagement on employee performance through job satisfaction as a mediating variable. *Jurnal Ilmu Manajemen*, *12*(1), 158–168. https://doi.org/10.26740/jim.v12n1.p158-168

Arifin, S. (2024). The role of job satisfaction in mediating employee engagement on employee performance. *International Journal of Research in Social Science and Humanities*, *05*(04), 01–07. https://doi.org/10.47505/ijrss.2024.4.1

Banu, M. A. H. (2019). A study on customer satisfaction towards online air ticketing services in Chennai. *Think India Journal*, *22*(14), 7832–7839.

Binsaeed, R. H., Yousaf, Z., Grigorescu, A., Chitescu, R. I., Nassani, A. A., & Samoila, A. (2023). Customer Engagement and Customer Relationship Management Capabilities' Effects on Innovation Performance and Customer Distrust's Moderating Role. *Sustainability*, *15*(12), 9475.

Cheng, Y. (2024). The linked factor of customer satisfaction and loyalty in f&b industry: a study of operational performance factor. *International Journal of Tourism and Hospitality in Asia Pasific*, *7*(1), 31–44. https://doi.org/10.32535/ijthap.v7i1.2167

Chiu, C., Kung, L., & Sun, P. (2022). Does ticket sales information disclosure affect speed of ticket sales? *International Journal of Market Research*, *65*(4), 484–503. https://doi.org/10.1177/14707853221119382

Daengs, A. G., & Istanti, E. (2022). The role of timelimenes in improving customer satisfaction. customer loyalty of PT. *JNE. International Journal of Entrepreneurship and Business Development (IJEBD*, *5*(2), 339–345.

Elliott, R. P. (2020). *e-Ticketing and Digital As-Builts*. Federal Highway Administration (US).

Elvera, E., & Mico, S. (2024). Customer engagement and relationship management's effects on business performance in digital banks. *JPPI (Jurnal Penelitian Pendidikan Indonesia*, *10*(1), 521–528. https://doi.org/10.29210/020242597

Fauzi, M., & Indrawan, M. I. (2023). The Influence of Employee Competence and Organizational Culture on Employee Performance with Work Motivation as Intervening at the Office of the Personnel and Human Resources Development Agency Binjai. *International Journal of Economics, Management and Accounting (IJEMA)*, *1*(3), 123–136.

Fauziyah, H., Iskandar, I., & Wachjuni, W. (2023). The Effect of Customer Engagement on Customer Loyalty Through Customer Satisfaction at Shopee. *Indonesian Journal Of Business And Economics*, *6*(1).

Ferdous, Z., F., I., Rahman, F., & Rumi, M. (2021). Customer satisfaction of Bangladesh railway e-ticketing system. *Bangladesh Journal of Public Administration*, *29*(3), 31–44. https://doi.org/10.36609/bjpa.v30i1.94

Fuller, E. J., Keene, S. T., Melianas, A., Wang, Z., Agarwal, S., Li, Y., … Yang, J. J. (2019). Parallel programming of an ionic floating-gate memory array for scalable neuromorphic computing. *Science*, *364*(6440), 570–574.

Ghozali, I., & Latan, H. (2019). Partial Least Squares Konsep, Teknik dan Aplikasi Menggunakan Program Warp PLS 5.0. *Badan Penerbit Universitas Diponegoro*.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer Nature.

Harzaviona, Y., & Syah, T. Y. R. (2020). Effect of customer satisfaction on customer loyalty and marketing organization performance in B2B market over heavy equipment company. *Journal of Multidisciplinary Academic*, *4*(4), 242–249.

Indrasari, M. (2019). *Pemasaran dan kepuasan pelanggan [Marketing and customer satisfaction*. Jakarta: Unitomo Press.

Kotler, P., & Keller, K. L. (2020). *Marketing Management* (18th ed.). New Jersey: Pearson Pretice Hall. Inc.

Kushner, S. (2020). New furniture for the box office: Computer, ticket, window. *Space and Culture*, *25*(4), 645–660. https://doi.org/10.1177/1206331219892527.

Kwee, E. (2024). The effect of customer engagement on repurchase intention among indonesia's digital banks. *Jurnal Ekonomi Dan Bisnis*, *27*(1), 183–208. https://doi.org/10.24914/jeb.v27i1.9605.

Li, Y., Menkovski, V., Fang, M., Huang, T., Pei, Y., Pechenizkiy, M., & Liu, S. (2022). Superposing many tickets into one: A performance booster for sparse neural network training. https://doi.org/10.48550/arxiv.2205.15322.

Macharia, D., & Oluoch, O. J. (2020). Impact Of Information Technology Outsourcing On Revenue Collection Performance Of Kiambu County Government, Kenya.

Mandalia, S., & Khairunnisa, N. (2023). The Effect of Using E-Tickets on Tourist Satisfaction At The Istano Basa Pagaruyuang Tourist Attraction. *EDUTOURISM Journal Of Tourism Research*, *5*(01), 1–15.

Noerlina, A. K., & Meiryani. (2023). Assessment of e-ticketing technology in concert website: A review of benefits, profits, and customer satisfaction. In *International Conference on Information Management and Technology (ICIMTech* (pp. 1–5). Malang, Indonesia. https://doi.org/10.1109/ICIMTech59029.2023.10277708.

Nusraningrum, D, Widyanty, W., & Wulandari, R. (2024). Elevating green business and product on small business: Impact of green entrepreneurship motivation, green operation management, and green marketing. *Journal of Ecohumanism*, *3*(8), 1151–1164. https://doi.org/10.62754/joe.v3i8.4800

Nusraningrum, Dewi, Mekar, T. M., & Gunawijaya, J. (2021). An Industry 4.0: Strategy Direction Of An Airline Operations Performance. *Jurnal Manajemen Indonesia*, *21*(3), 278–302.

Oliver, S. (2019). *Strategi Public Relations* (3rd ed.). Jakarta: Penerbit Erlangga.

Rakhmah, S. N., & Nisa, K. (2023). Penerapan metode analytical hierarcy process untuk pemesanan tiket pesawat secara online (E-ticket) di Wilayah Bekasi [Application of analytical hierarchy process method for online airline ticket reservations (e-ticket) in Bekasi Area. *Explore IT: Jurnal Keilmuan Dan Aplikasi Teknik Informatika*, *15*(2), 73–81.

Romadoni, D. R. (2022). Pengaruh total quality management dan operasi integrasi rantai pasok terhadap kinerja operasi: Survei pada UMKM Bordir di Sentra Bordir Kawalu Kota Tasikmalaya [The influence of total quality management and supply chain integration operations on operation. *ULIL ALBAB: Jurnal Ilmiah Multidisiplin*, *1*(10), 3595–3600.

Sekaran, U. (2019). *Research methods for business*. Jakarta: Salemba Empat.

Sharma, D., & Singh, B. (2021). Understanding the relationship between customer satisfaction. customer engagement and repeat purchase behaviour. *Vision the Journal of Business Perspective*, *27*(4), 449–457. https://doi.org/10.1177/0972262921992593.

So, K. K. F., King, C., & Sparks, B. (2014). Customer engagement with tourism brands: Scale development and validation. *Journal of Hospitality & Tourism Research*, *38*(3), 304–329. https://doi.org/10.1177/1096348012451456

Solikin, S., Thamrin, M., Majid, S. A., & Arifiani, L. (2024). Developing company competitiveness based on entrepreneurial values, transformational leadership, and service innovation through organizational performance. *JPPI (Jurnal Penelitian Pendidikan*

Indonesia), *10*(1), 417–431.

Sturgill, R. E., Dadi, G. B., Van Dyke, C., Patel, D., Withrow, J., & Newcomer, C. (2019). *E-Ticketing and advanced technologies for efficient construction inspections*. University of Kentucky Transportation Center.

Sulistiasih, S., & Widodo, W. (2025). Unlocking teachers' organizational citizenship behavior: Exploring compensation in transmitting visionary leadership. *Journal of Education and Learning (EduLearn*, *19*(2), 724–732. https://doi.org/10.11591/edulearn.v19i2.21498.

Thakur, R. (2019). The moderating role of customer engagement experiences in customer satisfaction–loyalty relationship. *European Journal of Marketing*, *53*(7), 1278–1310. https://doi.org/10.1108/ejm-11-2017-0895.

Thu, M. J., Qiu, Y., Matsuno, K., Kajihara, M., Mori-Kajihara, A., Omori, R., … Gokuden, M. (2019). Diversity of spotted fever group rickettsiae and their association with host ticks in Japan. *Scientific Reports*, *9*(1), 1500.

Tripathi, A., Patel, D., Sturgill, R., & Dadi, G. B. (2022). Analysis of e-Ticketing technology for inspection performance and practicality on asphalt paving operations. *Transportation Research Record*, *2676*(8), 186–197. https://doi.org/10.1177/03611981221083308.

Tuti, M., & Sulistia, V. (2022). The customer engagement effect on customer satisfaction and brand trust and its impact on brand loyalty. *Jurnal Manajemen Bisnis*, *13*(1), 1–15.

Wardiansyah, D. R., Indrawati, N. K., & Kurniawati, D. T. (2024). The effect of employee motivation and employee engagement on job performance mediated by job satisfaction. *International Journal of Research in Business and Social Science (2147-4478*, *13*(1), 220–231.

Wicaksono, A., Ginting, P., & Lubis, A. (2022). The effect of service quality of e-ticketing technique on word of mouth and repurchase intention with customer satisfaction as an intervening variable in online services at traveloka in binjai city. *International Journal of Research and Review*, *9*(8), 275–295. https://doi.org/10.52403/ijrr.20220824.

Widodo, W. (2021). *Metodologi penelitian populer & praktis [Popular & practical research methodology*. Depok: Rajawali Pers.

Ying, S., Sindakis, S., Aggarwal, S., Chen, C., & Su, J. (2021). Managing big data in the retail industry of Singapore: Examining the impact on customer satisfaction and organizational performance. *European Management Journal*, *39*(3), 390–400.

Zakari, A. A., & Ibrahim, U. A. (2021). Impact of customer satisfaction on business performance of SME's in Nigeria. *International Journal of Research in Business and Social Science*, *10*(5), 46–51.