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Enhancing Customer Satisfaction in Digital Services through Perceived Value Mediating Information Quality and System Quality

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A R T I C L E I N F O

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A B S T R A C T

This research investigates the function of perceived value in facilitating the relationship among information quality, system quality, and customer satisfaction in digital services. Utilizing the DeLone and McLean Information Systems success model, this study formulates a framework elucidating the impact of system performance and information accuracy on customer-perceived outcomes via perceived value. Utilizing a quantitative methodology via survey data from digital service users, the research findings indicate that both information quality and system quality significantly impact perceived value, subsequently enhancing customer satisfaction. Furthermore, the mediating effect of perceived value underscores its essential function as a psychological mechanism that connects the system and information dimensions to customer experience. The study's findings indicated that Information Quality exerts a substantial impact on both Perceived Value and Customer Satisfaction. In contrast, System Quality significantly influences Perceived Value but does not affect Customer Satisfaction. In addition, Perceived Value has not been demonstrated to exert a significant direct influence or serve as a mediator in the relationship among Information Quality, System Quality, and Customer Satisfaction

INTRODUCTION

In the fast-changing world of digital transformation, customer expectations for system quality and information quality are no longer just two things that go hand in hand; they are now the main things that need to be met in order to make customers happy. Digital services like mobile banking, e-commerce sites, online education, and digital solutions for small businesses depend a lot on how reliable, fast, and stable the systems are, as well as how accurate, useful, and easy to find the information is. When these quality standards aren't met, customers are less satisfied, which makes them less loyal and less likely to stay. As more people use mobile banking during and after the COVID-19 pandemic, they want not only services that work but also interactions that are smooth, error-free, and on time. A recent text analysis study of mobile banking app reviews shows that users mostly praise usability and reliability. On the other hand, complaints are mostly about login problems, technical glitches, and unstable updates, all of which are directly related to the quality of the system and information (Amirkhalili & Wong, 2025).

While numerous prior studies have established a direct correlation between system quality/information quality and customer satisfaction (Kumalasari, Permanasari, Karismariyanti, & Munandar, 2022), there is a scarcity of research investigating the psychological mechanisms—specifically, perceived value—that connect technical and informational attributes to satisfaction. Perceived value denotes a customer's comprehensive assessment of the benefits obtained relative to the sacrifices made. Zeithaml, Kumalasari et al. (2022) conducted a study on Mandiri mobile banking, revealing that "system quality, information quality, and service quality significantly influence customer satisfaction, which in turn influences loyalty." However, they did not explicitly investigate the role of perceived value as a mediator. A systematic review of digital financial services corroborated that information quality, system quality, service quality, perceived usefulness, and trust are the most significant predictors of customer satisfaction (Uddin & Nasrin, 2023).

Recent empirical evidence underscores the necessity of incorporating perceived value into digital service experience models. Li (2024) conducted a study on Airbnb users and discovered that both information quality and system quality significantly impact customer satisfaction, with e-service quality also being a crucial factor. The study's findings indicate a significant positive correlation between information quality and customer satisfaction, underscoring the essential role of clear, accurate, and reliable information in shaping consumer perceptions and trust (Li, 2024). A literature review (Kim, 2024) in the banking sector indicates that perceived value is consistently recognized as a crucial determinant of satisfaction and loyalty, especially as FinTech and mobile banking services grow increasingly intricate. These findings validate that perceived value is not a marginal construct, but rather a fundamental mediating mechanism for comprehending the influence of system and information quality on customer satisfaction.

The literature reveals a distinct research gap. To begin with, a lot of earlier research still groups system quality, information quality, and service quality together into the broad category of service quality without making it clear how

system quality and information quality are different. Second, empirical evidence continues to be inconsistent concerning the strength and significance of the relationship from system quality to perceived value across diverse digital service contexts and demographic segments. Third, there is a scarcity of studies examining a comprehensive mediation model within the realm of digital services in Indonesia, where perceived value acts as a mediator between system quality, information quality, and customer satisfaction.

LITERATURE REVIEW

This study employs a quantitative methodology featuring an explanatory survey design to examine the causal relationship between information quality and system quality in relation to customer satisfaction, with perceived value serving as a mediating variable. The quantitative method was selected due to its capacity to objectively assess the relationship between variables via numerical data (Creswell, 2018). The study population comprised active users of digital services in Indonesia, encompassing mobile banking, e-commerce, and public service applications. The sampling method employed was purposive sampling, predicated on the criteria of a minimum age of 18 years, recent experience with digital services within the past 6 months, and the capacity to evaluate the quality of systems and information. According to the analysis standards, there were 300 respondents, all of whom were retail customers in East Jakarta. Structural Equation Modeling (Hair, Hult, Ringle, & Sarstedt, 2021).

The research instrument utilized a questionnaire featuring a 5-point Likert scale, incorporating indicators from prior studies. DeLone and McLean say that the quality of information is based on how accurate, relevant, complete, and up-to-date it is. The quality of the system is based on how reliable, fast, easy to use, and stable it is. Zeithaml defines perceived value as the assessment of benefits in relation to sacrifices, including functional, emotional, and overall Zeithaml values. Oliver's customer satisfaction, on the other hand, is based on how well their expectations are met, how happy they are with their experience, and how satisfied they are overall. A pilot test was done on 30 people before the main spread to make sure the items were clear, the initial validity was good, and the instrument was reliable.

We used SmartPLS software to analyze the data with Partial Least Squares Structural Equation Modeling (PLS-SEM). Confirmatory Factor Analysis (CFA) was used to test construct validity, and Cronbach's alpha, composite reliability, and AVE were used to test the instrument's reliability. Additionally, hypothesis testing is conducted via path analysis utilizing bootstrapping and 5,000 resamplings to evaluate the mediation effect. This model enables researchers to ascertain whether perceived value functions as a complete or partial mediator in the relationship among information quality, system quality, and customer satisfaction (Zhao, Lynch, & Chen, 2010). The entire research process adheres to academic ethics by obtaining informed consent from participants and ensuring the confidentiality of respondents' personal information.

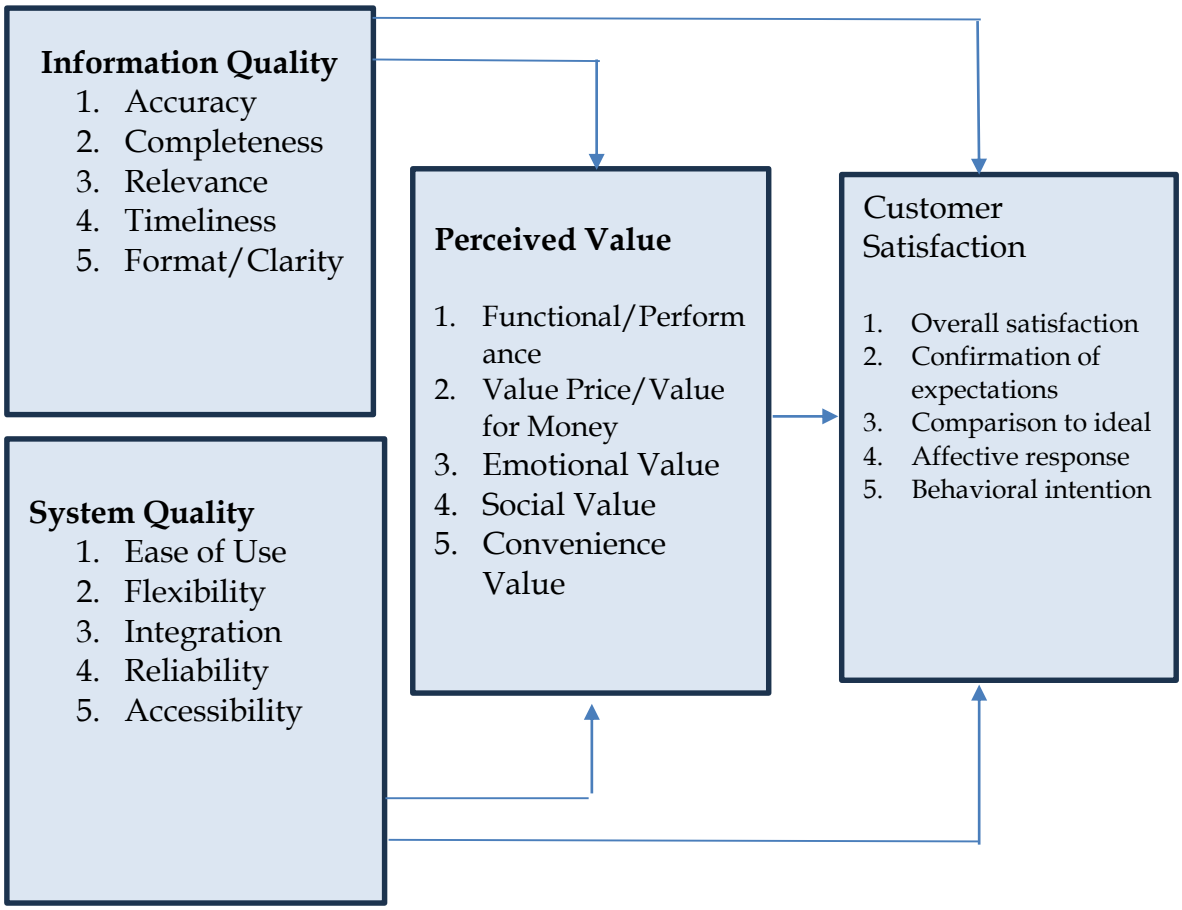

Figure 1. Conceptual Framework

METHODOLOGY

This study employs a reflective model to assess the constructs of Information Quality, System Quality, Perceived Value, and Customer Satisfaction, with the indicators representing the latent variables. The evaluation of the measurement model was conducted in accordance with the criteria established by Hair et al. (2021). This included testing for convergent validity through a loading factor of ≥ 0.70, composite reliability of ≥ 0.70, Cronbach's alpha of > 0.70, and an average variance extracted (AVE) of ≥ 0.50. These tests confirm the internal consistency and the indicator's capacity to elucidate the construct variance. We used the Fornell-Larcker criterion, which says that the square root of the AVE must be greater than the correlation between constructs, and the heterotrait-monotrait ratio of correlations (HTMT), which must be less than 0.90 (or 0.85 for the strict standard), to make sure that each construct has a clear conceptual distinction. Meeting all of these requirements makes the instrument more reliable and makes sure that research results can be understood correctly and consistently, and that they can add to our understanding of digital service quality in both theoretical and practical ways.

The results of the measurement model show that all of the research constructs meet the criteria for indicator validity. In particular, Information

Quality is made up of five valid items, System Quality is made up of five valid items, Perceived Value is made up of five valid items, and Customer Satisfaction is also made up of five valid items. These results validate that each construct possesses indicators that consistently and reliably represent the concept, facilitating further analysis.

Five valid indicators (outer loading 0.807–0.895; CR 0.939; α 0.919; AVE 0.755) are used to measure the Information Quality variable. IQ3 and IQ4 are the strongest. Demonstrating empirically that the timeliness (novelty) of information enhances public engagement, thereby establishing timeliness as a critical aspect of information quality (Li, K., et al. (2022), Wang, J., et al. (2023), Otero-Varela, L., et al. (2024).

The System Quality variable is assessed through five valid indicators (outer loading 0.814–0.878; CR 0.925; α 0.898; AVE 0.710), with SQ1 and SQ3 demonstrating the highest strength. Information system integration enhances system quality and directly influences organizational performance; integration is regarded as a crucial aspect of system quality, while usability and technical features of system quality influence purchase and usage intentions (Amiri, E., & Babazadeh Sangar, A. (2024).

There are five valid indicators for the Perceived Value variable (outer loading 0.802–0.869; CR 0.933; α 0.910; AVE 0.736), and PV3 and PV4 are the strongest. The assertion that social value influences consumer behavior toward luxury brands aligns with the notion that social value constitutes a fundamental aspect of perceived value. Social value in virtual communities enhances consumer engagement and significantly influences perceived value (Reyes-Menéndez et al., 2022; Laukkanen & Tura, 2022).

There are five valid indicators for the Customer Satisfaction variable (outer loading 0.794–0.864; CR 0.915; α 0.884; AVE 0.683), and CS3 and CS4 are the strongest. Affective satisfaction is a component of customer satisfaction, demonstrating that it mediates the relationship between perceived value, physical appearance, standardization, and other factors influencing word of mouth and customer participation (Khalifa et al., 2024).

The Fornell-Larcker criterion was used to check for discriminant validity, which means that each variable is different in theory and in practice. This criterion says that a variable's root mean square must be higher than its correlation with other variables. The analysis shows that the Information quality variable has a root mean square of 0.894, which is higher than its correlation with system quality (0.639) and perceived value (0.543), but lower than its correlation with customer satisfaction (0.869). The four variables—information quality, system quality, perceived value, and customer satisfaction—have been shown to have discriminant validity overall.

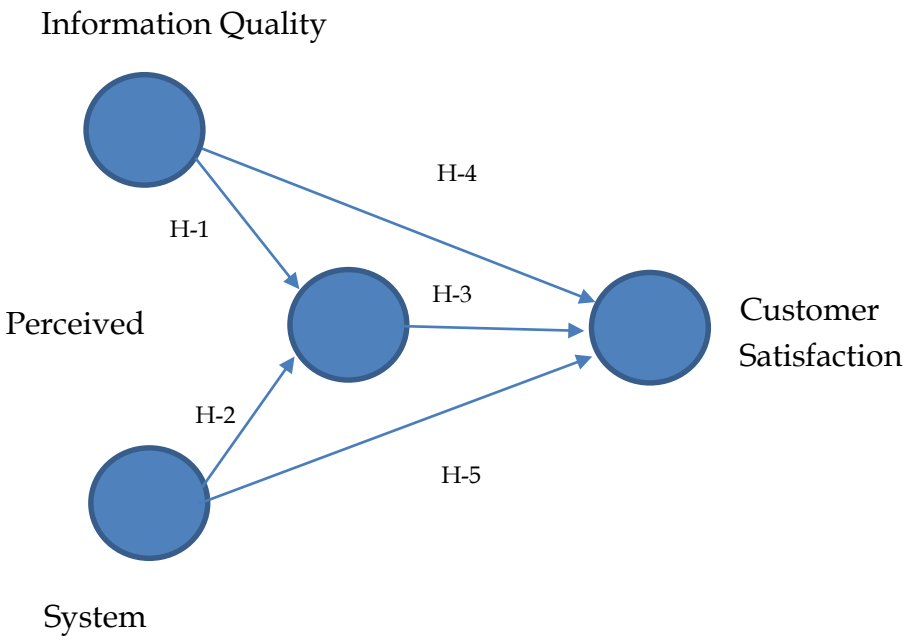

Figure 2. Kerangka Model Penelitian SEM-PLS

RESULTS AND DISCUSSION

1. Evaluation of Measurement Model

This study employs a reflective model to assess the constructs of Information Quality, System Quality, Perceived Value, and Customer Satisfaction, with the indicators representing the latent variables. The assessment of the measurement model was conducted in accordance with the criteria established by Hair et al. (2021). This included testing for convergent validity through a loading factor of ≥ 0.70, composite reliability of ≥ 0.70, Cronbach's alpha of > 0.70, and an average variance extracted (AVE) of ≥ 0.50. These criteria confirm the internal consistency and the indicator's capacity to elucidate the construct variance. The Fornell-Larcker criterion was used to test discriminant validity. This criterion says that the square root of the AVE must be greater than the correlation between constructs. The heterotrait-monotrait ratio of correlations (HTMT) must also be less than 0.90 (or 0.85 for the strict standard) to make sure that each construct has a clear conceptual distinction. Meeting all of these standards makes the instrument more reliable and ensures that research results can be understood correctly and consistently. This means that they can make valid theoretical and practical contributions to the field of digital service quality.

Table 1. Loading Factor

Item	Outer loadings	Keterangan
IQ1 <- IQ	0.84	valid
IQ2 <- IQ	0.807	valid
IQ3 <- QI	0.913	valid
IQ4 <- IQ	0.895	valid
IQ5 <- IQ	0.886	valid
SQ1 <- SQ	0.861	valid
SQ2 <- SQ	0.836	valid
SQ3 <- SQ	0.878	valid
SQ4 <- SQ	0.823	valid
SQ5 <- SQ	0.814	valid
PV1 <- PV	0.824	valid
PV2 <- PV	0.867	valid
PV3 <- PV	0.872	valid
PV4 <- PV	0.879	valid
PV5 <- PV	0.846	valid
CS1 <- CS	0.794	valid
CS2 <- CS	0.8	valid
CS3 <- CS	0.857	valid
CS4 <- CS	0.864	valid
CS5 <- CS	0.813	Valid

The estimation results of the measurement model show that all of the research constructs meet the requirements for indicator validity. Information Quality comprises five validated items, System Quality is indicated by five validated items, Perceived Value includes five validated items, and Customer Satisfaction is assessed through five validated items. These results validate that each construct possesses indicators capable of consistently and reliably representing the concept to facilitate further analysis.

Tabel 2. Outer Loading, Composite Reliabelity dan Average Varian Extracted (AVE)

Variable	Item pengukuran	Indicator	Outer loadings	Crobachs Alpha	Composite Reliabelity	AVE
Information Quality	IQ1	Accuracy	0.84	0.919	0.939	0.755
	IQ2	Completeness	0.807			
	IQ3	Relevance	0.913			
	IQ4	Timeliness	0.895			
	IQ5	Format/Clarity	0.886			
System Quality	SQ1	Ease of Use	0.861	0.898	0.925	0.71
	SQ2	Flexibility	0.836			
	SQ3	integration	0.878			
	SQ4	Reliability	0.823			
	SQ5	Accessibility	0.814			
Perceived Value	PV1	Functional/Performance	0.824	0.910	0.933	0.736
	PV2	Value Price/Value for Money	0.867			
	PV3	Emotional Value	0.872			
	PV4	Social Value	0.879			
	PV5	Convenience Value	0.846			
Customer Satisfaction	CS1	Overall satisfaction	0.794	0.884	0.915	0.683
	CS2	Confirmation of expectations	0.8			
	CS3	Comparison to ideal	0.857			
	CS4	Affective response	0.864			
	CS5	Behavioral intention	0.813			

Variables Information Quality assessed five valid indicators (outer loading 0.807–0.895; CR 0.939; α 0.919; AVE 0.755), with IQ3 and IQ4 demonstrating the highest strength. Empirical evidence indicates that the timeliness (novelty) of information enhances public engagement, establishing timeliness as a critical aspect of information quality (Li, K., et al. (2022), Wang, J., et al. (2023), Otero-Varela, L., et al. (2024).

The Variables System Quality measured five valid indicators, with SQ1 and SQ3 being the strongest (outer loading 0.814–0.878; CR 0.925; α 0.898; AVE 0.710). Information system integration enhances system quality and directly influences organizational performance; integration is regarded as a crucial aspect

of system quality, while usability and technical facets of system quality influence purchase and usage intentions (Amiri, E., & Babazadeh Sangar, A. (2024).

Five valid indicators (outer loading 0.802–0.869; CR 0.933; α 0.910; AVE 0.736) were used to measure Variables Perceived Value. PV3 and PV4 were the strongest. The affirmation of social value's influence on consumer behavior towards luxury brands aligns with the notion that social value constitutes a critical aspect of perceived value. Furthermore, social value within virtual communities enhances consumer engagement and significantly contributes to perceived value (Reyes-Menéndez et al., 2022; Laukkanen & Tura, 2022).

Customer Satisfaction was assessed using five valid indicators (outer loading 0.794–0.864; CR 0.915; α 0.884; AVE 0.683), with CS3 and CS4 demonstrating the highest strength. Affective satisfaction is a component of customer satisfaction and demonstrates that it mediates the relationship between perceived value, physical appearance, standardization, and other factors influencing word of mouth and customer participation (Khalifa et al., 2024).

Tabel 3. Fornell and Lacker

	Customer Satisfaction	Information Quality	Perceived Value	System Quality
Customer Satisfaction	0.869			
Information Quality	0.894	0.843		
Perceived Value	0.533	0.529	0.858	
System Quality	0.639	0.651	0.705	0.826

We used the Fornell-Larcker criterion to check for discriminant validity, which means that each variable is different from the others in theory and in practice. This criterion says that the square root of a variable's AVE must be bigger than the variable's correlation with other variables. The analysis shows that the Information Quality variable has an AVE root of 0.894, which is higher than its correlation with system quality (0.639) and perceived value (0.543), but lower than its correlation with customer satisfaction. (0.869). The discriminant validity for the four variables—information quality, system quality, perceived value, and customer satisfaction—was deemed satisfactory.

2. Evaluation of Structural Model (Inner Model) in SEM PLS Analysis

To make sure that hypothesis testing about the effect of research variables is valid and reliable, structural model evaluation is done through a series of systematic steps. The first step is to use the Inner VIF to test for multicollinearity. This checks how closely related the predictors in the model are to each other. A VIF value under 5 means that there is no sign of serious multicollinearity, but a value over 5 means that the predictors are strongly correlated, which could make the coefficient estimates less accurate (Hair et al., 2021). Consequently, this analysis is an essential step in guaranteeing parameter stability, preserving the reliability of inferences, and facilitating a more robust and persuasive interpretation of causal relationships within the structural model.

The second step in testing the structural model is to see if the hypothesis is important. This is done by using the t-statistic and p-value analysis based on

procedures and bootstrapping with 5,000 subsamples. The test results were deemed significant if the t-value exceeded 1.96 or the p-value was less than 0.05. Additionally, a 95% confidence interval that did not intersect zero further corroborated the validity of the conclusions. The third stage was effect size analysis, which used the f^2 measure to look at the direct effect and the V measure to look at the mediation effect. The f^2 value, which ranged from 0.02 to 0.35, showed how strong the effect was, from small to large. The V value, which ranged from 0.02 to 0.175, showed how much the mediation contributed (Hair et al., 2021; Lachowicz et al., 2018; Ogbeibu et al., 2022). This thorough assessment not only validated the importance of the relationship among variables but also offered strategic clarity regarding the extent of each influence's contribution, thereby establishing a foundation for prioritizing theoretical and practical interventions.

Table 5. Inner VIF

	Information Quality	**System Quality**	**Perceived Value**	**Customer Satisfaction**
Information Quality			1.737	1.767
System Quality			1..737	2.526
Perceived Value				2.020
Customer Satisfaction				

Prior to evaluating the research hypotheses, a multicollinearity assessment was conducted among the variables through an Inner VIF analysis. The results of the calculations showed that all of the VIF values were less than 5, which means that there was a low chance of multicollinearity. This finding confirms that the parameter estimates in the PLS-SEM model are stable and not affected by high correlations between predictors. This means that the hypothesis testing process can be done with a higher level of reliability and validity.

Direct effect

H-1: Information Quality- influences Perceived Value
H-2: System Quality- affects Perceived Value
H-3: Perceived Value influences Customer Satisfaction
H-4. Information Quality - Influences Customer Satisfaction
H-5. System Quality influences Customer Satisfaction

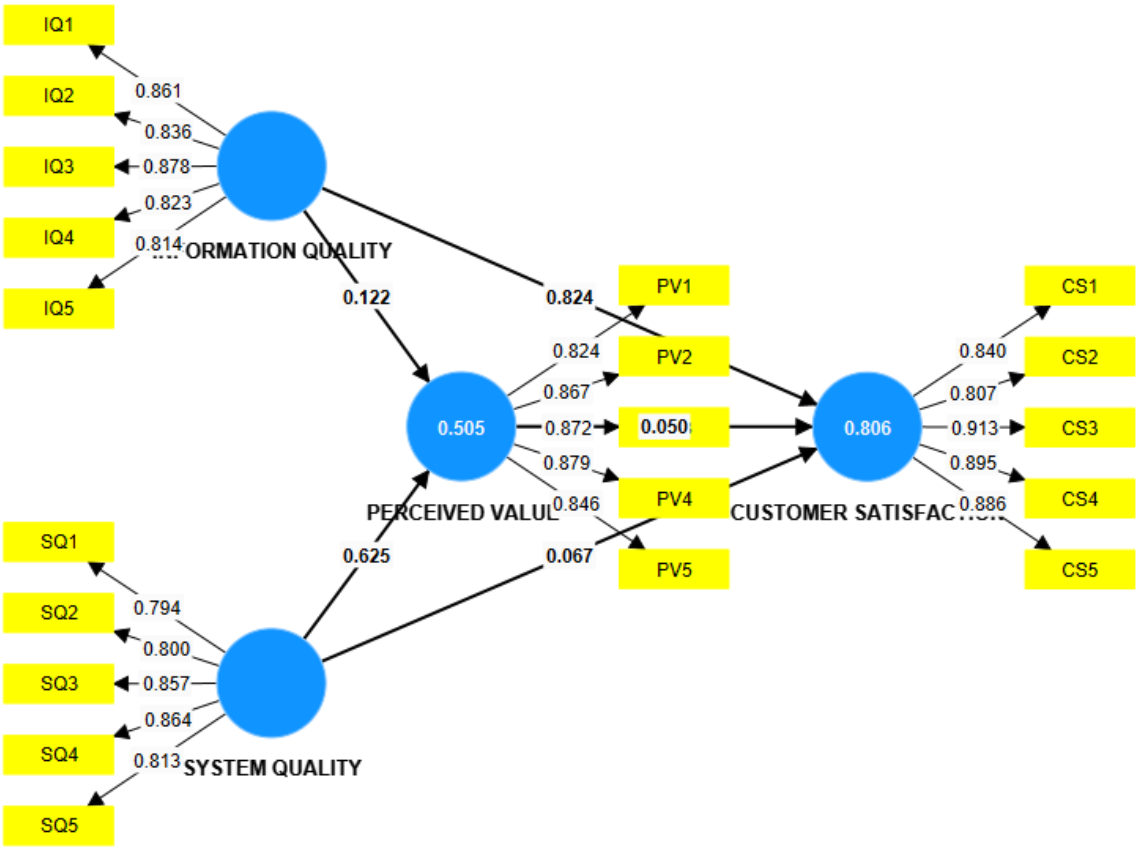

Figure 3. Direct Hypothesis Testing

Indirect effect

H-6. Perceived Value significantly mediates the influence of Information Quality on Customer Satisfaction.

H-7. Perceived Value significantly mediates the influence of System Quality Collaboration on Customer Satisfaction.

Tabel 6. Direct Hypothesis Testing

Hipotesis	Path Coeficient	P-Value	95% Interval Kepercayaan Path Coefficient		F-Square
			Batas Bawah	Batas Atas	
H-1: Information Quality-Perceived Value	0.122	0.048	0.005	0.247	0.017
H-2: System Quality-Perceived Value	0.625	0.000	0.503	0.744	0.454
H-3: Perceived Value-Customer Satisfaction	0.05	0.188	-0.017	0.133	0.006
H-4. Information Quality-Customer Satisfaction	0.824	0. 000	0.766	0.885	1.984

H-5. System Quality Customer Satisfaction	0.067	0.165	-0.033	0.155	0.009

Hypothesis 1 (H-1) is accepted, demonstrating that Information Quality significantly influences Perceived Value, with a path coefficient of 0.122 and a p-value of 0.048 (<0.05). Every rise in Information Quality raises Perceived Value by a small amount, with a 95% confidence interval of 0.005–0.247 and an effect size of F^2=0.017. In the realm of fresh food e-commerce, information quality exerts a positive and significant influence on utilitarian value, a dimension of perceived value. The development of an information quality scale for e-commerce platforms—encompassing dimensions such as completeness, accuracy, and presentation—alongside a discussion of information quality's role as a precursor to user value and perception (perceived usefulness/value), serves as a valuable reference for methodologies and indicators. Kang, J.-W., and Namkung, Y. (2024), Liu, C.-T. (2023).

Hypothesis 2 (H-2) is accepted, demonstrating that System Quality significantly influences Perceived Value, with a path coefficient of 0.625 and a p-value of 0.000 (<0.05). With a 95% confidence interval of 0.503–0.744 and an effect size of F^2=0.454, this shows a significant effect. Each increase in System Quality increases Perceived Value. System quality, along with information and service quality, has a positive and significant effect on perceived utilitarian value and perceived hedonic value. This, in turn, affects continuous purchasing intentions. In fresh food e-commerce, platform attributes such as system quality and information quality significantly increase perceived utilitarian value (perceived value dimension). Lin, J. Kang, J.-W., & Namkung, Y. (2021). (2024).

Hypothesis 3 (H-3) was rejected, demonstrating that Perceived Value exerted no significant influence on Customer Satisfaction, evidenced by a path coefficient of 0.05 and a p-value of 0.188 (>0.05). Every rise in Perceived Value led to a rise in Customer Satisfaction. The effect size was F^2=0.006, which means the effect was small. The confidence interval was 95% between -0.017 and 0.133. Yuliati, Taryana, and Anggraini (2024) examined the influence of quality, value, satisfaction, trust, and commitment on customer loyalty. The results showed that quality had an effect on value and satisfaction, but value did not have a big effect on satisfaction. Satisfaction boosted trust, but commitment didn't change loyalty, so the strategy was to focus on improving quality.

Hypothesis 4 (H-4) is accepted, showing that Information Quality has a big effect on Customer Satisfaction with a path coefficient of 0.824 and a p-value of 0.000 (<0.05). An increase in Information Quality leads to a rise in Customer Satisfaction, with a 95% confidence interval of 0.766–0.845 and an effect size of F^2=1.984, signifying a substantial impact. The quality of online information (it should be accurate, complete, and relevant) and the design of the website have a big effect on how happy customers are, which in turn makes them more likely to shop at the same place again. The results show how important it is for platform providers to keep the quality of information and user experience high to keep users happy and loyal for a long time. Yoo, S. Kim, J., et al. (2020).

Hypothesis 5 (H-5) is rejected, demonstrating that System Quality exerts no significant influence on Customer Satisfaction, evidenced by a path coefficient

of 0.067 and a p-value of 0.165 (>0.05). Every increase in System Quality increases Customer Satisfaction, the 95% confidence interval is between -0.033–0.155 and the effect size F^2=0.009 indicates a very small effect..A study by Saputra & Binastuti (2025) examined the influence of service quality, system quality, and customer experience on customer loyalty in digital banking in Jakarta, with customer satisfaction as a mediator. The findings indicated that service quality and customer experience had a significant impact on satisfaction, whereas system quality did not. Positive user experiences lead to satisfaction, which leads to loyalty.

Table 7. Hypothesis Test of Mediation Effect

Hipotesis	Path Coefficient	P-Value	95% Interval Kepercayaan Path Coefficient		Upsilon V
			Batas Bawah	Batas Atas	
H-6: Information Quality-Perceived Value -Customer Satisfaction	0.006	0.343	-0.002	0.023	0.006
H-7: System Quality-Perceived Value-Customer Satisfaction	0.031	0.215	-0.01	0.090	0.032

Hypothesis 6 (H-6) is rejected, signifying that Perceived Value does not significantly mediate the impact of Information Quality on Customer Satisfaction, as evidenced by a path coefficient of 0.006 and a p-value of 0.343 (>0.05). The 95% confidence interval ranges from -0.002 to 0.023, indicating that the direct effect of Perceived Value exerts a minor influence (Upsilon V=0.006).

Hypothesis 7 (H-7) is rejected, demonstrating that Perceived Value does not significantly mediate the influence of System Quality collaboration on Customer Satisfaction, as evidenced by a path coefficient of 0.031 and a p-value of 0.215 (>0.05). The 95% confidence interval is (0.090–0.090), and the direct effect has a small effect (Upsilon V=0.032).

3. Evaluation, of the FIT Model (Goodnes of FIT)

To validate the proposed model empirically, the PLS-SEM methodology employs a thorough array of evaluation metrics. The R^2 statistic is used to figure out how much of the endogenous construct's variance can be explained by the exogenous construct. Hair et al. (2019) say that values of 0.25 (weak), 0.50 (moderate), and 0.75 (strong) are good. Q^2 also tests how well the model can predict outcomes using the blindfolding method, where values greater than zero show that the model has enough predictive power (Sarstedt et al., 2019). Conversely, the SRMR metric evaluates the overall model fit, with values under 0.08 signifying acceptable fit (Henseler et al., 2015). The combination of these indicators not only proves that the model is theoretically possible, but it also

shows that the model is strong enough to accurately explain and predict real-world events.

Tabel 8. R Square

	R Square	Q Square
Perceived Value	0.502	0.488
Customer Satisfaction	0.804	0.801

Chin (1998) suggested qualitative benchmarks of 0.19 (low), 0.33 (moderate), and 0.66 (high) for the R-Square statistical measure, which shows how much of the variance in an endogenous variable can be explained by other endogenous and exogenous variables in a model. Q-Square is used to see how well the model can predict things. A value greater than 0 means that it can predict things, and Hair et al. (2019) say that 0 (low), 0.25 (moderate), and 0.50 (high) are the categories. So, the R-Square and Q-Square values together not only give an idea of how well the model explains the data, but they also show how well the model predicts the phenomenon being studied. The data shows that perceived value has a moderate effect of 48.8% and customer satisfaction has a high effect of 80.1%.

Tabel 9. Standarized Root Mean Square Residu (SRMR)

	Taksiran Model
SRMR	0.057

To see how well a model fits, you can use the Standardized Root Mean Square Residual (SRMR) to compare the correlation matrix of the actual results with the correlation matrix that the model predicted (Yamin, 2022). Hair et al. (2021) asserted that an SRMR value under 0.08 indicates an inadequate model, whereas a value ranging from 0.08 to 0.10 is deemed acceptable (acceptable fit), as also highlighted by Schermelleh-Engel et al. (2003). The SRMR value acquired in this study was 0.057. This means that the model doesn't fully meet the requirements for an ideal fit. But these results still show that the empirical data can explain the relationship between variables well enough that the model is still useful for further analysis.

Tabel 10. GoF Index

Rerata Communality	Rerata R square	GoF Index
0.627	0,603	0.604

To find out how well the model fits overall, you can use the Index Goodness of Fit (GoF). This includes both the measurement model and the structural model. To do this, you take the square root of the geometric product of the means, communality, and the average R^2 value in the reflective measurement model. According to Wetzels et al. (2009) in Yamin (2022), GoF can be divided into three levels: 0.10 is low, 0.25 is medium, and 0.36 is high. The GoF

value for this study was 0.604, which puts it in the high range based on the calculations. This means that the real-world data does a great job of explaining how the measurement model and the structural model work together as a whole. This means that the model is valid and representative.

CONCLUSION AND RECOMMENDATION

The research titled "Enhancing Customer Satisfaction in Digital Services through Perceived Value Mediating Information Quality and System Quality" yields the following conclusions:

1. Information Quality has a significant effect on Perceived Value, with a path coefficient of 0.122 and a p-value of 0.048 (<0.05). Each increase in Information Quality r increases Perceived Value, with a 95% confidence interval between 0.005 and 0.247 and an effect size of F^2=0.017, which means the effect is small.
2. System Quality has a significant effect on Perceived Value with a path coefficient of 0.625 and a p-value of 0.000 (<0.05). Each increase in System Quality increases Perceived Value, with a 95% confidence interval between 0.503–0.744 and an effect size of F^2=0.454, indicating a significant effect.
3. Perceived Value has a significant effect on Customer Satisfaction with a path coefficient of 0.05 and a p-value of 0.188 (>0.05). Each increase in Perceived Value increases Customer Satisfaction, with a 95% confidence interval between -0.017–0.133 and an effect size of F^2=0.006, indicating a small effect.
4. Information Quality has a significant effect on Customer Satisfaction with a path coefficient of 0.824 and a p-value of 0.000 (<0.05). Each increase in Information Quality increases Customer Satisfaction, with a 95% confidence interval of 0.766–0.845 and an effect size of F^2=1.984, indicating a significant effect..
5. There is no significant effect of System Quality on Customer Satisfaction, as evidenced by a path coefficient of 0.067 and a p-value of 0.165 (>0.05). Each increase in System Quality correlates with an increase in Customer Satisfaction, within a 95% confidence interval of -0.033 to 0.155 and an effect size of F^2=0.009, indicating a negligible effect.
6. The path coefficient for Perceived Value is 0.006 and the p-value is 0.343 (>0.05), which means that it does not significantly mediate the effect of Information Quality on Customer Satisfaction. The 95% confidence interval is between -0.002 and 0.023, and the direct effect of Perceived Value has a small influence (Upsilon V=0.006).
7. Perceived Value does not significantly mediate the effect of System Quality collaboration on Customer Satisfaction, as indicated by a path coefficient of 0.031 and a p-value of 0.215 (>0.05). The 95% confidence interval ranges from 0.090 to 0.090, and the direct effect is minimal (Upsilon V=0.032).

Based on the results of this study, it is recommended that further research place more emphasis on developing models that are able to strengthen the role of Perceived Value as a mediator between information quality and system quality on customer satisfaction, considering that these variables show weak and insignificant influences in some relationships. In addition, future research can expand the context of digital services by including other variables such as service experience, trust, or user engagement, which have the potential to mediate the

relationship between variables more strongly. In line with current trends, research can also integrate factors such as artificial intelligence personalization, data security, and the adoption of mobile-first services, which increasingly determine customer expectations and satisfaction. The use of longitudinal methods is also recommended to more deeply understand the dynamics of changing customer perceptions of digital service quality.

FUTHER STUDY

This study certainly has limitations that need to be considered as a basis for further research. First, the survey design used is cross-sectional, so it is unable to capture the dynamics of changes in customer satisfaction, perceived value, and the quality of systems and information over time; longitudinal research would be more appropriate to understand the evolutionary patterns of relationships between variables in the ever-evolving digital service ecosystem. Second, the research context is limited to a specific digital service sector in Indonesia, so the findings cannot be generalized to other sectors such as healthcare, e-learning, or e-commerce. Cross-country still needs to be proven through replication in various industries and cultural contexts. Third, the use of perception-based instruments (self-reported measures) has the potential to cause subjective bias or social desirability bias; therefore, further research is recommended to complement actual behavioral data, such as application usage logs or transaction history, to strengthen the validity of the results.

This study exclusively examines information quality and system quality as determinants of perceived value and customer satisfaction, neglecting other variables such as trust, service quality, and user engagement, which may also serve as significant mediators or moderators. Consequently, future research should aim to broaden the theoretical model, incorporate additional variables, and employ a mixed-method, multivariate approach, while also exploring cross-industry and cross-country contexts to enhance the understanding of the mechanisms underlying customer satisfaction in digital services.

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