



The influence of contractors service quality dimension on apartment developers loyalty: The mediating role of developer satisfaction

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ABSTRACT

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The main direction of this research is to examine the influence of customer satisfaction of apartment developers as an intervening factor between reliability, assurance, tangibility, responsiveness, and empathy, and developer loyalty towards apartment contractors in Indonesia. The originality of this research lies in the analysis of the mediating role of customer satisfaction in the relationship between assurances, empathy, reliability, and responsiveness as dimensions of service quality with customer loyalty of apartment developers. The research employs a quantitative method with a structural equation modeling approach. The population of the study comprises apartment developers in Indonesia, with data collected through an online survey. The data collection process obtained 316 usable respondents. The data that has been collected and filtered was then investigated using a structured equation modelling-partial least square approach with SMARTPLS. The statistical tests revealed that developer satisfaction significantly bridges the assurances, empathy, reliability, and responsiveness with customer loyalty of apartment developers toward contractors. This study offers several managerial implications regarding strategies that contractors can implement to achieve loyalty from apartment developers in Indonesia.

Contribution/Originality: The originality of this research lies in the analysis of the mediating role of customer satisfaction in the relationship between assurances, empathy, reliability, and responsiveness as dimensions of service quality with customer loyalty of apartment developers.

1. INTRODUCTION

The building and real estate sector plays a lucrative part in bolstering a country's economy (Altuwaim, AlTasan, & Almohsen, 2024). The real estate construction business is characterised by its resilience and potential for recovery following the COVID-19 pandemic turbulence in 2020 (Jill, 2014). The worldwide market for residential real estate is expected to experience a substantial expansion. According to Markets, the market is predicted to increase, reaching \$72.77 billion in 2023. Indonesia exhibits potential as a real estate investment in the Asian region. Real estate industry in Indonesia has experienced a surge in demand following the COVID-19 outbreak in the Asian region (Grahadyarini, 2023). Indonesia's increasing demand for housing may lead to a rise in the number of flat construction initiatives in the country. Apartment developer companies and apartment contractors engage in apartment construction projects to capitalise on the increasing demand for apartment housing. These apartment projects are funded by the developer and companies, and then they hire contractors to

carry out the project (Oberlender, Spencer, & Lewis, 2022). Customer loyalty is a crucial and lucrative asset for service businesses, particularly those in the service and B2B sectors. This is because customers with good loyalty are harder to shift to competitors, and they also likely will recommend the products or services to their peers, which, in addition, customer loyalty indirectly reduces companies marketing costs, particularly those related to customer retention (Wattoo & Iqbal, 2022; Zhang & Li, 2019). Customer loyalty is a critical asset for service providers, particularly for companies operating in the business-to-business (B2B) sector (Ahmed et al., 2023). To prosper and achieve success in the apartment building service sector in Indonesia, apartment contractor companies must acquire customer loyalty from developer companies, especially when the demand is increasing. This study focuses on the lucrative customer loyalty of apartment developers. Numerous academic researchers try to investigate customer loyalty, along with the variables that predict it. Among the most commonly cited predictors of loyalty across various B2B industries is customer satisfaction (Iqbal, Hasan, Bukhari, & Ramish, 2023). In addition, service quality is another key variable that significantly enhances loyalty (Huang, Lee, & Chen, 2019). Some other studies have even concluded that service quality has a substantial impact on customer satisfaction (Els & Bisschoff, 2023; Gaudenzi, Confente, & Russo, 2020). Building on prior academic research, this study centres its analysis on the intricate combinations of service quality, customer satisfaction, and customer loyalty. The interplay between service quality, customer satisfaction, and customer loyalty has garnered significant attention from professionals and academic researchers alike. Recent studies have highlighted that customer satisfaction serves not only as a predictor of loyalty but also as a crucial mediator between service quality and customer loyalty (Balci, Caliskan, & Yuen, 2019; Hussain, 2016; Islam et al., 2021) even in the B2B context (Balci et al., 2019; Islam et al., 2021). Only a limited number of studies have explored this mediating role of customer satisfaction, despite its importance.

Service quality, or SERVQUAL, is a multi-dimensional construct originally conceptualized by Parasuraman and subsequently refined and applied across various industries, including aviation, banking, communications, construction, and the internet (Zeithaml, Parasuraman, & Malhotra, 2002). There have been many studies that look at how SERVQUAL affects customer satisfaction and loyalty, but not many that look at how each of the dimensions (reliability, empathy, responsiveness, tangibility) affects satisfaction and loyalty (Slack, Singh, & Sharma, 2020; Subrahmanyam, 2017; Teeroovengadum, 2022). For instance, Subrahmanyam (2017) studied the consequences of SERVQUAL as multidimension variables on developing satisfaction and loyalty within higher education industries. Similarly, Teeroovengadum (2022) focused on the banking industry, while Slack et al. (2020) analyzed the consequence of the multi-dimensional dimensions from SERVQUAL on developing satisfaction in the grocery sector. The study of the impact of each SERVQUAL dimension—reliability, empathy, responsiveness, and tangibility on customer loyalty and satisfaction remains a significant opportunity within academic research.

This study seeks to bridge a gap in the literature by exploring the consequence of satisfaction as a mediating construct between SERVQUAL dimensions—reliability, empathy, responsiveness, and tangibility and loyalty within the apartment construction industry. To primary research goals guide the study to achieve this objective: first, examining the impact of reliability, empathy, responsiveness, and tangibility on customer loyalty; and second, evaluating the intervening role of customer satisfaction in the relationship between reliability, empathy, responsiveness, and tangibility and customer loyalty.

2. REVIEW OF LITERATURE AND HYPOTHESIS

2.1. Customer Satisfaction

Academic literature, particularly in marketing, has extensively explored customer satisfaction, a popular variable. The theoretical framework underlying customer satisfaction is the expectancy-disconfirmation theory. According to this theory, consumers evaluate their satisfaction with a product or service by comparing their expectations with the actual experiences they have when interacting with it, which customers as individuals will exhibit a positive satisfaction state when their expectation with a product or service is below their experience when

they experience it (Oh, 1999; Oliver, 1997). Conversely, if their experiences fall short of their expectations, they will have a negative perception or feel dissatisfied (Nisar & Prabhakar, 2017). According to Kotler and Keller (2021) customer satisfaction described as an emotional response of the customer, characterized by either satisfaction or dissatisfaction, which emerges when they compare the actual performance of a service with their initial expectations. If the performance exceeds their expectations, the resulting emotional state will be one of positive satisfaction, and vice versa. Similarly, Kushwaha, Kumar, and Kar (2021) describe customer satisfaction as the emotional response triggered in customers when they experience or use a product or service. The positive or negative perceptions that customers develop based on their experiences heavily influence these evaluations of satisfaction. In this research, the definition of developer satisfaction, or customer satisfaction, is the affective condition of apartment developers as customers of apartment contractors. This affective condition is positive or satisfied if the apartment developers' experience with the contractors' services exceeds their expectations. Conversely, this condition will be negative or dissatisfied when the developers' experience with the services falls below their expectations. Customer satisfaction is a crucial factor in business strategy, both for B2C and B2B enterprises. The significance of customer satisfaction has prompted extensive research in various management fields, including B2B management. Customer satisfaction serves as a critical indicator in evaluating customer retention. Customer satisfaction can be used as an indicator to measure how well the performance of the offered product meets customer expectations, whether it is above expectations or falls short of them (Kushwaha et al., 2021). A customer satisfaction also can build, maintain, and develop the relationship bond between customers and service or product providers, motivating customers to engage in repeat transactions with the company (Al Qaisi & Alrosan, 2020; Wattoo & Iqbal, 2022). The influence and significance of customer satisfaction in the business world have led to extensive academic research investigating how customer loyalty is shaped by the dominant role of customer satisfaction across various industries (Hansopaheluwakan, Arief, & Elidjen, 2023; Khan, Salamzadeh, Iqbal, & Yang, 2022; Venkatakrishnan, Alagiriswamy, & Parayitam, 2023). This research interest extends further, as numerous academic research studies have also confirmed the substantial consequences of satisfaction on loyalty, particularly in the B2B sector (Arthur, Agbemabiese, Amoako, & Anim, 2024; Masitenyane & Dhurup, 2023; Wattoo & Iqbal, 2022). Based on proven prior studies, leading this study to propose:

H1: The customer satisfaction of apartment developers has a positive consequence toward their loyalty.

2.2. Customer Loyalty

Building customer loyalty effectively achieves the objective of a business strategy in B2B industry, which is to attain and maintain a competitive edge. Loyal customers play a crucial role in a company's sustainability and success. They are less likely to switch to competitors, more consistent in using the company's products, and likely to recommend the products to others (Biedenbach, Hultén, & Tarnovskaya, 2019). Furthermore, customer loyalty reduces marketing costs by lowering the expenses associated with customer retention and repeat transactions. This loyalty also fosters a psychological attachment between customers and the brand, ensuring their continued commitment, even when their decisions to repurchase may seem irrational. Journal by Youcef, Djelloul, and Abderrezak (2015) further describe customer loyalty as a psychological state that emerges when customers are satisfied with a product or service. This satisfaction, coupled with a positive emotional state associated with the product or service, fosters a deep sense of attachment. Consequently, customers develop a strong loyalty, making them more likely to maintain their relationship with the brand. Furthermore, Wattoo and Iqbal (2022) define customer loyalty as a condition where customers hold a positive perception of a product, prompting them to repurchase even when such a decision may seem irrational.

In this study, the psychological state of apartment developers, known as customer loyalty, stems from their contentment with the services provided by apartment contractors, along with their positive feelings towards these services, which in turn fosters a tendency to engage in repeat transactions with the apartment contractor.

2.3. SERVQUAL

Services in marketing are activities provided by an organization to other organizations, where the characteristics of services are intangible, inseparable, heterogeneous, and perishable (Kotler & Keller, 2021). SERVQUAL served as a lucrative factor for business in the B2B industry because SERVQUAL has an impact on the subsequent services provided to customers (Mcknight, Lankton, Nicolaou, & Price, 2020). When customers encounter poor service quality, it negatively impacts their satisfaction with the company, which in turn affects their loyalty (Shah, Syed, Imam, & Raza, 2020). The role of SERVQUAL in industry has been of interest to academics in researching it for a long time. One of the early studies that discussed SERVQUAL was Parasuraman. According to Parasuraman, SERVQUAL can be defined as the disparity between the anticipated and perceived level of service by consumers perception, because customers typically evaluate the services they receive in relation to their initial expectations before the service encounter (Parasuraman, Zeithaml, & Berry, 1985). Parasuraman et al. (1985) developed a definition of SERVQUAL and developed five dimensions to measure customer perceptions of SERVQUAL, where these dimensions have become popular and are widely used today: those are responsiveness, reliability, tangibles, empathy, and assurances (Asubonteng, McCleary, & Swan, 1996). The SERVQUAL variables in their development have become popular variables and are researched and adapted in various industries (Samen, Akroush, & Abu-Lail, 2012) such as the mobile service industry (Samen et al., 2012) supermarket industry (Slack & Singh, 2020) banking industry (Teeroovengadum, 2022) logistic service industry (Gaudenzi et al., 2020) also school industry (Shoukat & Zaid, 2020). Several prior studies also developed SERVQUAL for the construction industry (Forsythe, 2016; Sunindijo, Hadikusumo, & Phangchunun, 2014). This research adapts SERVQUAL from research by Forsythe (2016) and Sunindijo et al. (2014) because they are suitable for construction industry, and it's relevant to the apartment construction industry. Sunindijo et al. (2014) adapted and developed 5 SERVQUAL dimensions specifically for the construction industry. Subsequently, this study develops the SERVQUAL dimensions for apartment contractors by adapting and building upon the study of Parasuraman et al. (1985) and Sunindijo et al. (2014) resulting in the following five SERVQUAL dimensions.

- a) Tangibility is related to the field conditions, project facilities, physical results, equipment used, and physical condition of personnel and workers from apartment contractors.
- b) Reliability relates to the apartment contractor's ability, expertise, and methods that can be relied upon in carrying out the apartment construction project in accordance with the promised quality of work and the accuracy of the specifications achieved.
- c) Responsiveness, related to the apartment contractor's willingness to help apartment developer as customers and also provide fast response service.
- d) Assurance relates to the level of knowledge and professional level of staff and workers from apartment contractor, which guarantees the customer's sense of trust that the project is always carried out well according to what has been planned.
- e) Empathy relates to personal attention and concern from apartment contractors towards apartments developer as their customers.

Both academic and managerial circles recognize the crucial role of SERVQUAL in maintaining customer loyalty for companies. Numerous studies across various industries, including the B2B sector (Dsouza & Sharma, 2021; Sarkar, Chauhan, & Khare, 2020) have long validated the influence of SERVQUAL. Although limited, some studies have specifically explored and confirmed the impact of individual SERVQUAL dimensions—such as tangibility, reliability, responsiveness, and empathy—on customer loyalty (Slack et al., 2020; Teeroovengadum, 2022). Building upon the empirical findings from prior research, these following hypotheses are proposed for testing.

H₂: The assurance exerts a compelling influence on the customer loyalty of apartment developers.

H₃: The empathy has a notable impact on the customer loyalty of apartment developers.

H₂: The reliability dimension of SERVQUAL significantly affects the customer loyalty of apartment developers.

H₃: The responsiveness dimension of SERVQUAL has a notable effect on the customer loyalty of apartment developers.

H₆: The tangibility dimension of SERVQUAL has a compelling consequence on the customer loyalty of apartment developers.

In the academic realm, several studies have confirmed SERVQUAL's impact on customer satisfaction across various industries (Huang, Wu, Lee, & Li, 2019; Qalati et al., 2021; Slack et al., 2020) and some have also begun to explore the mediating role of satisfaction between SERVQUAL and loyalty. However, there is still a lack of research specifically examining how customer satisfaction mediates the relationship between tangibility, reliability, responsiveness, and empathy with customer loyalty, particularly in the apartment construction industry. This research tries to fill this gap by investigating these hypotheses.

H₇: Customer satisfaction significantly serves as an intervening variable between assurance and loyalty in the apartment construction industry in Indonesia.

H₈: Customer satisfaction positively functions as a mediator between empathy and customer loyalty in the apartment construction industry in Indonesia.

H₉: Customer satisfaction positively mediates between reliability and customer loyalty within the apartment construction industry in Indonesia.

H₁₀: Customer satisfaction positively mediates between responsiveness and customer loyalty.

H₁₁: Customer satisfaction significantly mediates between tangibility and customer loyalty.

From the previously formed hypothesis, a research model was developed as presented in Figure 1.

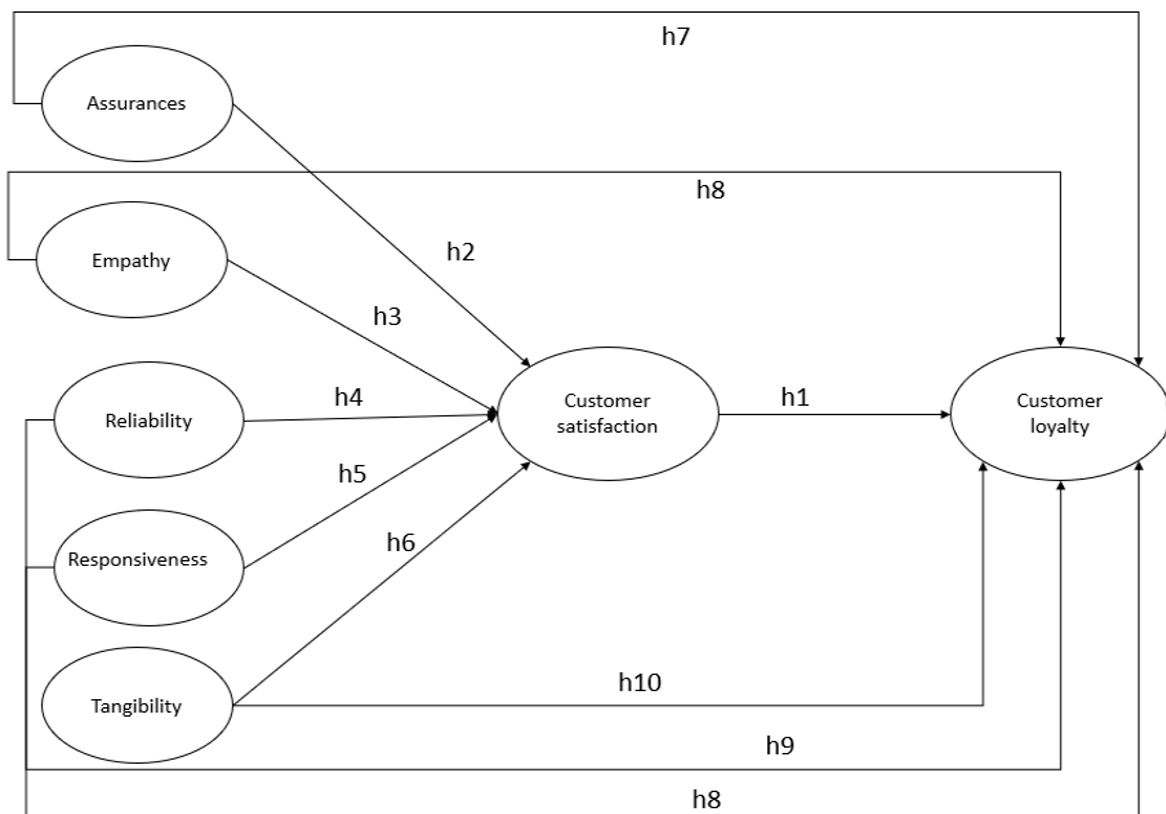


Figure 1. Research model formed from hypotheses.

The Figure 1 represents the conceptual research model that was used in this study which formed from 10 hypotheses.

3. METHODOLOGY

The research populations in this study are apartment developer companies in Indonesia that have experience in the apartment construction industry in Indonesia for more than 5 years, and the unit analysis in this study is the project manager from the apartment developer with over 5 years of experience in the apartment project management. The method chosen for data collection is using an online survey, where the data collection design is carried out with a cross-sectional design (Sekaran & Bougie, 2016). Data collection is carried out by sending an online questionnaire created with Google Forms, then sent to prospective respondents through various digital media from October 1, 2023, to December 30, 2023. This data collection period was chosen in light of the growing demand for flat housing in Indonesia following the Covid-19 pandemic in previous years (Grahadyarini, 2023). Respondents' data was gathered using an online questionnaire conducted via Google Forms. The research question in the online questionnaire was modified to be in the Indonesian language. This decision was made since the respondents are more convenient and comprehend when using Indonesian language to complete the questionnaire, as Indonesian is their native language. A total of 350 potential respondents were sent through online media for this study. Out of the 350 questionnaires distributed, only 316 questionnaires were collected from respondents. After conducting filtering tests to identify missing data and data outliers, the data from these 316 respondents were deemed suitable for the next stage of analysis. Before collecting data from respondents, we conducted a pilot study to assess the comprehensibility of the questionnaire. The pilot study consisted of a sample of 30 participants, with the objective of evaluating the clarity and understandability of the generated questionnaire.

This research on human subjects has undergone ethical review and obtained ethical approval in compliance with local legislations and the institutional requirements of Binus University.

Table 1 displays the demographic analysis from the respondents in this study.

Table 1. The demography of apartments developer respondents in Indonesia.

Demography	Classes	Numbers of respondents
Gender	Man	290
	Woman	26
Age group	19 – 29	0
	30 – 39	17
	40 – 49	120
	50 – 59	125
	>60	44

Table 1 reveals the demographic respondent data in this study, which shows that the majority age group of this study is between 51–60 years, accounting for 40.85% or 125 individuals. Next, the majority respondent age in this study is between 40–49 years, which accounted for 38.92% or 120 persons. Also, there are 14.27% or 44 respondents were with the aged of 60 and older, while 5.56% or 17 individuals were between the ages of 31 and 40. Furthermore, according to Table 1, most of respondents who are male with 92% of the total, or 291 individuals. In contrast, there were only 25 female respondents, making up 7.89% of the total.

This study adapts all measurements for the latent constructs from the previous research and tailors them to fits its construct. The latent constructs are measured using a 5-point Likert scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree." The measurement of customer loyalty for apartment developers is adapted from the items used in Kittur and Chatterjee (2021) and Zhang and Li (2019) as both studies examine loyalty within a B2B context. The measurement of customer satisfaction for apartment developers is adapted from the scales in Gligor, Bozkurt, Gölgeci, and Maloni (2020) then completed by adapting from the journal of Kittur and Chatterjee (2021) and considering that both studies developed measurements for the B2B industry. Furthermore, the dimensions of SERVQUAL are measured by adapting scales from Forsythe (2016) and Sunindijo et al. (2014) with the consideration that both studies developed the SERVQUAL variable for the B2B construction industry.

4. RESULTS

This study employs the PLS-SEM, or Partial Least Square–Structured Equation Modelling, to conduct statistical testing on the research model and data. The selection of PLS-SEM is due to the limited amount of respondent data available and the exploratory nature, which aligns with the suitability of PLS SEM (Hair, Hult, Ringle, & Sarstedt, 2021). Based on Hair, Risher, Sarstedt, and Ringle (2019) the measurement and reporting analysis using PLS-SEM is divided into two main sections: inner model measurement and outer model measurement. The first part of the reporting process is the outer model measurement analysis. This includes looking at the loading factor variables, figuring out the convergent validity, the composite reliability, and the discriminant validity. The result of outer model analysis is presented in Table 2.

Table 2. Results of SEM PLS regression analysis for factor loadings, CR, AVE of apartments developer in Indonesia.

Variables		Codes	Factor loadings	Composite reliability- CR	Convergent validity -AVE
Customer loyalty		CuL1	0.717	0.723	0.886
		CuL2	0.899		
		CuL3	0.919		
		CuL4	0.913		
		CuL5	0.925		
		CuL6	0.851		
Customer satisfaction		CS1	0.966	0.925	0.980
		CS2	0.957		
		CS3	0.965		
		CS4	0.959		
SERVQUAL	Assurances	SQ1	0.935	0.962	0.864
		SQ2	0.929		
		SQ3	0.924		
		SQ4	0.929		
	Reliability	SQ5	0.920	0.974	0.904
		SQ6	0.964		
		SQ7	0.961		
		SQ8	0.957		
	Empathy	SQ9	0.951	0.965	0.874
		SQ10	0.928		
		SQ11	0.945		
		SQ12	0.915		
	Responsiveness	SQ13	0.945	0.969	0.862
		SQ14	0.916		
		SQ15	0.944		
		SQ16	0.902		
		SQ17	0.937		
	Tangibility	SQ18	0.926	0.965	0.848
		SQ19	0.943		
		SQ20	0.951		
		SQ21	0.940		
		SQ22	0.840		

Table 2 presents the results of a regression analysis that calculated the loading factor, AVE (Average Variance Extracted), and CR (Composite Reliability) values. The loading factor results presented in Table 2 indicate that all values exceed the recommended threshold for loading factors, which is above 0.7 (Sarstedt, Hair Jr, Cheah, Becker, & Ringle, 2019). This indicates that all items have good validity in measuring the latent constructs. The results of the Average Variance Extracted (AVE) analysis show that each latent construct in the model surpasses the recommended threshold value of 0.5, with values ranging above 0.700. These findings imply that each latent construct has good convergent validity. Additionally, the Construct Reliability (CR) analysis reveals that each

latent construct exceeds the threshold criterion of 0.8, with values above 0.9, indicating that the reliability of each latent construct is strong.

After analysing reliability and validity, the next stage is to verify that each latent variable in this study is empirically different from one another through the discriminant validity statistical test stage. This study employs the Fornell-Larcker criterion test as a statistical test to validate the discriminant validity. It determines that the discriminant validity is satisfactory if the square root of the AVE in a latent variable construct should be bigger than the correlation between that latent variable and others. Table 3 displays the outcomes of the Fornell-Larcker.

Table 3. Statistical results of Fornell-Larcker of apartments developer in Indonesia.

Variables	Assurances	Customer loyalty	Customer satisfaction	Empathy	Reliability	Responsiveness	Tangibility
Assurances	0.93						
Customer loyalty	0.648	0.876					
Customer satisfaction	0.747	0.674	0.959				
Empathy	0.577	0.623	0.594	0.935			
Reliability	0.923	0.655	0.751	0.579	0.951		
Responsiveness	0.663	0.697	0.655	0.542	0.662	0.929	
Tangibility	0.652	0.698	0.619	0.600	0.647	0.648	0.921

The Table 3 shows the Fornell-Larcker criterion statistical test result, which is where the results are in accordance with the rule of thumb reference. The result in Table 3 indicates that all latent constructs in this model are empirically distinct from one another. Upon the confirmation of the indicator's validity, all latent variables demonstrate strong convergent validity and reliability, as well as empirical differences from each other (Ketchen, 2013).

The structural test is the second phase of the SmartPLS study. The structural test comprises two sequential steps (Hair Jr et al., 2021). The first analysis is to measure the coefficient of determination. This coefficient of determination is a statistical test that explains how much data variance in the dependent latent construct is influenced by the latent constructs that influence it. This coefficient of determination is measured through the R square statistical test; the value of the R square is ideally within the range between 0 and 1 (Ketchen, 2013). The statistical calculation of the coefficient of determination measurement analysis is presented in Table 4.

Table 4. The results of the coefficient of determination of the dependent variable.

Dependent latent construct	R ² / Coefficient determination
Customer loyalty of apartments developer	0.646
Customer satisfaction of apartments developer	0.640

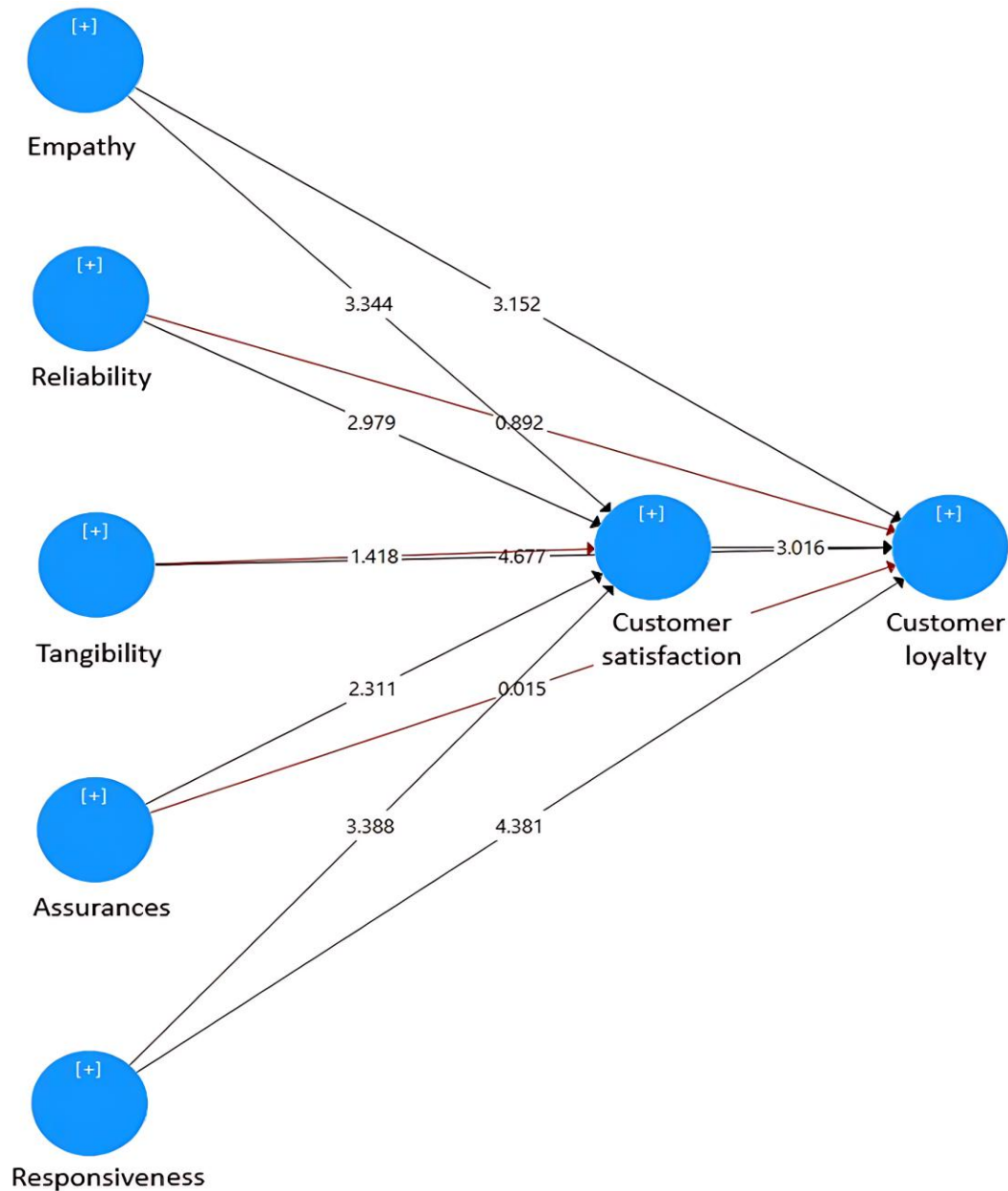
As listed in Table 4, the coefficient of determination for the customer loyalty variable is 0.646, indicating that 64.6% of the variance within the customer loyalty construct is accounted for by the influencing variables. This suggests that the model effectively explains a significant portion of the data variance related to customer loyalty. Meanwhile, the R square value for the customer satisfaction variable is 0.640, which means that 64.0% of the data variance in the customer satisfaction construct can be explained by the variables that influence it.

The second stage after the determination coefficient process is carried out is the path analysis test. Path analysis is a regression estimation test that can be used to test the alignment of the correlation matrix consisting of two or more dependent variables with the causal relationship model being compared (Hair et al., 2019).

The path analysis test in this study commenced initially by employing bootstrapping procedures with 5,000 resamples from the research data to assess the path coefficient and significance test (Hair et al., 2019). The statistical procedures for the path analysis test are presented in Table 5 and Figure 2.

Table 5. Path analysis test result of this study.

Hypotheses	t-statistic (Bootstrap)	P-values (Bootstrap)
Hypotheses 1. Customer satisfaction -> Customer loyalty	3.016	0.003
Hypotheses 2. Assurances -> Customer loyalty	0.015	0.988
Hypotheses 3. Empathy -> Customer loyalty	3.152	0.002
Hypotheses 4. Reliability -> Customer loyalty	0.892	0.373
Hypotheses 5. Responsiveness -> Customer loyalty	4.381	0.000
Hypotheses 6. Tangibility -> Customer loyalty	4.677	0.000

**Figure 2.** Hypotheses test results.

The path analysis in [Figure 2](#) and [Table 5](#) found that customer satisfaction (t-statistics = 3.016, p-value = 0.003), empathy (t-statistics = 3.152, p-value = 0.002), responsiveness (t-statistics = 4.381, p-value = 0.00), and tangibility (t-statistics = 4.677, p-value = 0.000) have a significant and positive consequence on customer loyalty. However, reliability (t-statistics = 0.892; p-value = 0.373) and assurances (t-statistics = 0.015, p-value = 0.988) do not have any influence on customer loyalty. Thus, the structural testing confirmed the acceptance of hypotheses 1, 3, 5, and 6, while hypotheses 2 and 4 were found to be rejected.

The next step in analyzing the inner or structural model is the mediation assessment. This analysis, guided by Hair Jr et al. (2021) stated that mediation occurs when a third latent variable influences the relationship between two other latent constructs. A strong theoretical foundation is crucial for examining mediation effects within a model. Zhao, Lynch Jr, and Chen (2010) identify several types of mediation: complementary, competitive, and complete mediation. These types vary based on the significance and direction of the direct and indirect effects.

The statistical calculations result of the mediation analysis conducted are shown in Table 6.

Table 6. Structural mediation analysis evaluation.

Hypotheses	t- statistics	P-values
H7. Assurances → Customer satisfaction → Customer loyalty	2.041	0.033
H8. Empathy → Customer satisfaction → Customer loyalty	2.156	0.031
H9. Reliability → Customer satisfaction → Customer loyalty	2.153	0.032
H10. Responsiveness → customer satisfaction → Customer loyalty	2.154	0.031
H11. Tangibility → Customer satisfaction → Customer loyalty	1.327	0.185

Table 6 shows that the customer satisfaction has influence as mediating variable to intervene the relationship between empathy (t-statistics=2.156, p value = 0.031), reliability (t-statistics = 2.153, p value = 0.032), assurances (t-statistics = 2.041, p value = 0.033), and responsiveness (t-statistics=2.154, p value = 0.031) with customer loyalty. However, Table 6 also demonstrates that customer satisfaction does not have any significant influence as a mediating variable between tangibility (t-statistics = 1.327, p-value = 0.185) and customer loyalty.

5. DISCUSSIONS

The primary aim of this study is to examine the significant role of customer satisfaction as an intervening variable in the relationship between customer loyalty and the dimensions of tangibility, reliability, responsiveness, empathy, and assurance. Substantiated into two distinct research objectives. The first objective is to learn how different aspects of SERVQUAL affect customers' loyalty; the second is to find out how customer satisfaction mediates the SERVQUAL dimensions and loyalty.

The first objective is to study the influence of tangibility, empathy, reliability, and responsiveness from SERVQUAL consequences on developer loyalty. To answer the first research question, the first to fifth hypotheses were formed, which were then analysed using the SEM approach. The statistical test analysis results prove empirically that the hypotheses 1, 3, 5, and 6 are accepted, where customer satisfaction, empathy, responsiveness, and tangibility dimensions have a direct impact in forming developer loyalty to apartment contractors in Indonesia. These findings align with previous research, which proved that the dimensions of empathy, responsiveness, and tangibility significantly influence customer loyalty (Koay, Cheah, & Chang, 2022; Slack & Singh, 2020; Teeroovengadum, 2022). However, the statistical tests also revealed that the assurance and reliability dimensions did not influence the formation of loyalty to apartment contractors. Although these results conflict with several previous studies Prentice, Dominique Lopes, and Wang (2020); Slack and Singh (2020) and Teeroovengadum (2022) they are in accordance with other academic research that produces similar results that provide empirical findings that SERVQUAL has no impact on customer loyalty (Subrahmanyam, 2017). While assurance and reliability may not have a direct impact on developer loyalty, they do not have a significant influence on developer satisfaction. This could be because assurance and reliability are closely related to the reliability of the SERVQUAL of the apartment contractor when working on the project, so it is closely related to the developer's satisfaction with the apartment contractor's work results compared to loyalty.

The second research question is to examine any compelling influence from customer satisfaction as a mediator variable between SERVQUAL dimensions and loyalty. The seventh to eleventh hypotheses are proposed to answer this second research question. The PLS-SEM statistical test from this research shows that the hypotheses 7, 8, 9,

and 10 are accepted, meaning that customer satisfaction bridges the dimensions of assurances, empathy, reliability, and responsiveness with developer loyalty. Here, developer satisfaction fully mediates between reliability, assurance, and developer loyalty, and developer satisfaction partially mediates between empathy and responsiveness and developer loyalty. These findings are aligned with prior research that demonstrates that customer satisfaction significantly acts as intervening variable between SERVQUAL and loyalty across many industries, including banking and telecommunications industries (Kaura, Prasad, & Sharma, 2015; Ting et al., 2020). However, the statistical tests also reveal that the eleventh hypothesis is rejected; developer satisfaction does not have a significant influence in bridging tangibility with developer loyalty because there is no impact of tangibility on satisfaction. However, this does not mean that tangibility is not important for apartment contractors, because tangibility has a significant influence in forming developer loyalty in apartment contractors.

Apart from answering the two research questions, the results of the SEM statistical test reveal that assurance, reliability, responsiveness, and empathy have a significant impact on building developer satisfaction with apartment contractors in Indonesia. This finding is also aligned with several previous academic findings that also concluded that there is a significant impact of SERVQUAL's influence on building satisfaction (Balci et al., 2019; Sthapit, Del Chiappa, Coudounaris, & Bjork, 2019; Teeroovengadum, 2022). Tangibility alone does not significantly contribute to developer satisfaction; however, it has a compelling influence on customer loyalty to apartment contractors.

As discussed in the background, where previously there was a lot of prior academic findings regarding the influence between SERVQUAL, satisfaction, and loyalty in various industries, then there were several studies that investigated how satisfaction mediates SERVQUAL and loyalty in B2B industries (Balci et al., 2019; Hussain, 2016; Islam et al., 2021; Pal, Funilkul, Eamsinvattana, & Siyal, 2022) but only a few studies have been conducted to discuss each dimension of SERVQUAL and its influence on loyalty and satisfaction (Slack et al., 2020; Subrahmanyam, 2017; Teeroovengadum, 2022) especially in the construction sector. The results reveal that not all dimensions of SERVQUAL have the same consequence on satisfaction and loyalty of apartment developers with their apartment contractors. The statistical analysis test also found that customer satisfaction does not mediate all dimensions of SERVQUAL and customer loyalty for the apartment construction industry. Developer satisfaction significantly mediates assurances, responsiveness, empathy, and reliability of SERVQUAL with their loyalty toward apartment contractors in Indonesia.

6. IMPLICATIONS

6.1. Theoretical Implications

The first theoretical implication of this research is its contribution to the development of expectancy-disconfirmation theory. The study investigates the mediating role of developer satisfaction in the relationship between tangibility, responsiveness, empathy, and visibility in relation to developer loyalty. Using expectancy-disconfirmation theory as the theoretical foundation for understanding satisfaction formation, this research offers empirical evidence on how developer satisfaction mediates the relationship between these dimensions and loyalty within the apartment construction industry. Additionally, the study extends and enriches the application of expectancy-disconfirmation theory within this specific industry context.

The second is on SERVQUAL or service quality. Numerous studies have examined SERVQUAL in various industries, highlighting its influence on various variables. However, research that studies the dimensions of SERVQUAL individually is still relatively small, especially for the B2B industry. So, the results can be a subsidized literature by proving the influence of each dimension of SERVQUAL for the B2B apartment construction industry.

6.2. Managerial Practice Implications

This study also has valuable managerial contributions management. First, this study indicates that developer loyalty is a lucrative element for the sustainability of contractor companies. To achieve this loyalty, contractor

companies can foster it through developers' satisfaction with the contractors' performance and the quality of services provided. Secondly, the research findings indicate that to gain developers' loyalty, contractor companies must prioritize the developers' satisfaction. Additionally, factors such as empathy and responsiveness when addressing developers' requests, as well as tangibility aspects like uniforms, equipment, and tools during the project's execution, are crucial.

7. CONCLUSIONS AND RECOMMENDATIONS

The study's results yielded the following conclusions. The satisfaction of apartment developers with their contractors, as examined in this study, significantly mediates the relationship between empathy, responsiveness, assurances, and reliability, and the loyalty of apartment developers to apartment contractors. However, the study also concludes that satisfaction does not serve as a significant mediator for tangibility.

This study has several limitations that could serve as guidance for future research. The number one limitation lies in its context, as it focuses on the apartment contractor industry in Indonesia. Future research could apply this model to the apartment contractor industry in other countries. Another limitation of this study is regarding the antecedents. This study focuses solely on the dimensions of SERVQUAL, namely tangibility, empathy, and reliability as antecedents of satisfaction and loyalty. Academic literature encompasses numerous other variables. Further research can take focus from other sides for antecedents, such as from the relationship side with relationship quality as an antecedent of satisfaction and loyalty of apartment developers.

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