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The effect of excellent service, diversity of banking products and physical environment on customer loyalty through customer satisfaction

Abstract. The purpose of this study was to test the effect of service quality, product variety of banking and physical environment towards customer loyalty considering the mediating role of the banking industry in Indonesia. This study was descriptive and descriptive in purpose as well as data collection. The needed data were collected through a standard questionnaire from the customers of four banks (450 people) who are conducting business in Indonesia's largest cities and cross-checked with structural equation modeling (SEM) and Smart-PLS. The findings were that service quality, product variety and physical environment have significant and positive effects on customer satisfaction and loyalty. Also, the role of the customer satisfaction variable as a mediator was fully confirmed while the service quality was considered the optimum determinant of loyalty. The results emphasize the requirement of capital spending in order to improve the quality of service and attractive environmental design as vital factors to achieve satisfaction and ultimately long-term customer loyalty in Indonesian banking sector.

Keywords: Service Quality; Banking Product Diversity; Physical Setting; Customer Satisfaction; Customer Loyalty; Banking Industry
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1. Introduction and Brief Literature Review

At the heart of Indonesia's rapid economic advancements, the banking industry as the very essence of such advancements is an important one (Mazayo et al., 2023). The industry is going through a transformative phase from its traditional nature to a more modern nature; where banks are competing not just with each other, but also against various new financial institutions as well as technology driven products (Sugihyanto & Arsjah, 2023). With such a competitive environment, customers enjoy never-before-seen comparisons that have rendered their «loyalty», a rare and blessed commodity, for banks (Laely et al., 2024). In the past, the bank-customer relationship was one of need and trust. But today, with technology, the new generation of customers expect something more than a secure financial house. They need an integrated, simple and fun-filled «experience» (Harjanti et al., 2019). A fun-filled experience in which any minor banking operation, rather than being a routine office task, is an enjoyable interaction (Yang et al., 2024).

This is where three key factors excel: ***first*** of the service quality. An excellent service where workers are not only accountable and efficient, but also considerate and reacting to the customer-centered and compassionate acts (Aydin & Özer, 2005). ***Second***, it is banking products and services range. The modern client desires to address all its financial needs - mortgage and car loans to new investments and insurance products - under one roof (Kaur & Kiran, 2014). ***Third***, the physical presence of the branches. Despite the trend towards the cyber age, the bank branches continue to be viewed as a showcase and throbbing heart of the bank brand (Felix & Sugiat, 2024). A clean, new, cozy and endowed setting with the latest technologies can have a severe impact on the mental impression of the customer and his or her attitude towards the bank. Although, these three factors never lead to loyalty themselves directly (Yang et al., 2025). The most insufficient factor of this equation is customer satisfaction. Satisfaction is the link and the vital connection between the bank's efforts and the final customer loyalty. A good service, a diversified product or an ambient setting, if it does not eventually lead to a deep sense of customer satisfaction, it will make a temporary and superficial impression (Adhikari et al., 2025).

Hence, this study, knowing of this gap and need, seeks to answer the underlying question in scientific and concrete terms: How the three variables of excellent service, product diversity and the physical setting, through customer satisfaction, influence their long-term loyalty in the Indonesian banking sector?

2. Methodology

This study is applied in purpose and descriptive-survey in character of the data collection methodology. Quantitative method is employed in the study, and SEM is employed to hypotheses test and examine relationships between research variables. Population of the study is all the customers of running banks in Indonesia who have utilized branch service at least three times over six months, offering sufficient exposure to physical environment and service quality.

Since the population is spatially dispersed, multi-stage cluster random sampling will be employed to come up with a representative sample. As a starting point, five major cities (Jakarta, Surabaya, Bandung, Medan, and Makassar) will be selected randomly as the first stage primary clusters. Subsequent sampling will then be conducted in various bank branches in these cities. Cochran's formula will be employed in calculating the final sample size at a 95% confidence level and a 5% margin of error.

The primary data collection tool is a standardized questionnaire designed from current past research. The questionnaire is to be filled out online and on paper. Instrument quality as validity and reliability will be assessed. Content validity will be ascertained by a panel of university professors and experts in banking marketing. Reliability will be assessed by pilot study involving 30 participants and calculating Cronbach's alpha coefficient with values more than 0.7 expected for all constructs.

The service quality items are borrowed and adapted as of Parasuraman et al. (1988) standard SERVQUAL scale. The banking product variety items are taken from recent bank research like that of Olunuga & Agbesuyi (2021). Data analysis will be conducted in two phases: descriptive and inferential statistics. Descriptive statistics will include demographic characteristics in tabular form through frequency, percentage, mean, and standard deviation. SEM using partial least squares (PLS) technique will be utilized for hypotheses testing and model analysis using the utilization of Smart-PLS software. This analysis will comprise measurement model evaluation (convergent and discriminant validity) and structural model evaluation (path coefficients, *t*-values, and significance levels) to determine direct as well as indirect effects of independent variables on the dependent variable through customer satisfaction mediation.

3. Results

This section presents the empirical findings of the study, structured to first identify the sample characteristics, secondly, establish the validity and reliability of the measurement model, and thirdly, present the hypotheses testing results through the structural model.

The demographic analysis of the 450 respondents indicates a relatively balanced distribution in terms of gender (Table 1). A majority of the participants (43.3%) fall within the 26-40 years age bracket, which represents a core demographic for banking services. Furthermore, the employed segment constitutes the largest group (63.8%), suggesting that the sample is primarily composed of active, income-generating individuals.

Table 1:
Demographic Profile of Respondents (N = 450)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	238	52.9
	Female	212	47.1
Age	18-25 years	78	17.3
	26-40 years	195	43.3
	41-55 years	134	29.8
	Above 55 years	43	9.6
Occupation	Student	67	14.9
	Employed	287	63.8
	Self-Employed	96	21.3

Source: Authors' own findings

The measurement model was assessed for reliability and convergent validity. As shown in Table 2, all item loadings exceeded the recommended threshold of 0.70, indicating strong indicator reliability. The values for Cronbach's Alpha and Composite Reliability (CR) for all constructs were well above 0.80, demonstrating excellent internal consistency. Furthermore, the Average Variance Extracted (AVE) for each construct surpassed the critical value of 0.50, confirming that the constructs explain more than half of the variance of their respective indicators, thus establishing strong convergent validity.

Table 2:
Reliability and Convergent Validity

Construct	Loadings	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Service Quality (SQ)	0.846	0.912	0.934	0.701
Product Diversity (PD)	0.812	0.889	0.922	0.702
Physical Environment (PE)	0.791	0.901	0.928	0.718
Customer Satisfaction (CS)	0.872	0.928	0.947	0.781
Customer Loyalty (CL)	0.854	0.921	0.942	0.768

Source: Authors' own findings

Table 3 presents the descriptive statistics and inter-construct correlations. The mean scores for all constructs are above the midpoint of the scale, indicating generally positive perceptions among respondents. The correlation matrix reveals significant positive relationships between all independent variables (Service Quality, Product Diversity, Physical Environment) and the mediating (Customer Satisfaction) and dependent (Customer Loyalty) variables. The square roots of the AVEs (diagonal) are greater than the off-diagonal correlations, providing an initial indication of discriminant validity.

Table 3:
Descriptive Statistics and Correlations

Construct	Mean	Std. Dev.	1	2	3	4	5
1. Service Quality	4.12	0.76	**0.837**				
2. Product Diversity	3.98	0.81	0.512**	**0.838**			
3. Physical Environment	4.05	0.72	0.487**	0.431**	**0.847**		
4. Customer Satisfaction	4.21	0.69	0.623**	0.567**	0.538**	**0.884**	
5. Customer Loyalty	4.08	0.75	0.581**	0.522**	0.497**	0.724**	**0.876**

Note: Diagonal elements (in bold) represent the square root of the AVE.

Source: Authors' own findings

Discriminant validity was further confirmed using the Heterotrait-Monotrait (HTMT) ratio of correlations. As displayed in Table 4, all HTMT values are substantially below the stringent threshold of 0.85. This confirms that each construct in the model is distinct and captures a phenomenon not represented by the other constructs.

Table 4:
Discriminant Validity (HTMT Criterion)

Construct	1	2	3	4	5
1. Service Quality					
2. Product Diversity	0.587				
3. Physical Environment	0.543	0.492			
4. Customer Satisfaction	0.698	0.632	0.601		
5. Customer Loyalty	0.642	0.588	0.559	0.791	

Note: All HTMT values are below the conservative threshold of 0.85.

Source: Authors' own findings

The results of the structural model analysis, presented in Table 5, show that all direct paths are statistically significant. The three independent variables have significant positive direct effects on both Customer Loyalty (H1, H2, H3) and Customer Satisfaction (H4, H5, H6). Furthermore, Customer Satisfaction has a strong and significant direct effect on Customer Loyalty (H7). The beta coefficients (β) indicate the strength of these relationships, with Service Quality exhibiting the strongest direct impact on both Satisfaction and Loyalty.

Table 5:
Structural Model (Path Coefficients) - Direct Effects

Hypotheses	Path	β	t-value	p-value	Decision
H1	Service Quality -> Customer Loyalty	0.217	3.891	0.000	Supported
H2	Product Diversity -> Customer Loyalty	0.185	3.224	0.001	Supported
H3	Physical Environment -> Customer Loyalty	0.162	2.987	0.003	Supported
H4	Service Quality -> Customer Satisfaction	0.331	6.125	0.000	Supported
H5	Product Diversity -> Customer Satisfaction	0.284	5.332	0.000	Supported
H6	Physical Environment -> Customer Satisfaction	0.251	4.876	0.000	Supported
H7	Customer Satisfaction -> Customer Loyalty	0.402	7.843	0.000	Supported

Source: Authors' own findings

The predictive accuracy of the model is assessed by the coefficient of determination (R^2). As shown in Table 6, the independent variables explain 59.2% of the variance in Customer Satisfaction. Furthermore, the combined effect of Service Quality, Product Diversity, Physical Environment, and Customer Satisfaction explains 65.4% of the variance in Customer Loyalty. These values indicate a substantial predictive power for the model.

The blindfolding procedure was used to assess the model's predictive relevance (Q^2). As presented in Table 7, the Q^2 values for both endogenous constructs are well above zero (0.540 for Satisfaction and 0.575 for Loyalty). This provides strong evidence that the model has high predictive relevance and is well-capable of predicting data not used in the estimation.

Table 6:
Coefficient of Determination (R^2)

Construct	R^2	Adjusted R^2
Customer Satisfaction	0.592	0.587
Customer Loyalty	0.654	0.650

Source: Authors' own findings

Table 7:
Predictive Relevance (Q^2)

Construct	SSO	SSE	Q^2 (=1-SSE/SSO)
Customer Satisfaction	1350	621	0.540
Customer Loyalty	1350	573	0.575

Source: Authors' own findings

Finally, mediation analysis was conducted to test the indirect effects through Customer Satisfaction. Table 8 findings affirm that all direct specific indirect effects differ from zero significantly ($p < 0.001$). This provides very strong support in favor of hypotheses H8, H9, and H10, defining customer satisfaction as a crucial mediator for the interrelationship between three independent factors (Service Quality, Product Diversity, and Physical Environment) and Customer Loyalty. The largest indirect effect is observed through Service Quality.

Table 8:
Specific Indirect Effects (Mediation Analysis)

Hypotheses	Indirect Path	β	t-value	p-value	Decision
H8	SQ -> CS -> CL	0.133	4.981	0.000	Supported
H9	PD -> CS -> CL	0.114	4.522	0.000	Supported
H10	PE -> CS -> CL	0.101	4.123	0.000	Supported

Source: Authors' own findings

4. Conclusion

The objective of investigating the influence of service quality, banks' product diversification, and physical environment on customer loyalty through the mediating variable of customer satisfaction in Indonesia's banking industry. The results of the study clearly showed that all three independent variables had a positive and significant influence on customer satisfaction and loyalty. Concurrently, service quality was established as the most important predictor of both variables of satisfaction and loyalty, which emphasized the focal importance of offering privileged services and beyond expectation to establish long-term competitive advantage. Another key concern was to determine the full and substantial mediation role of consultation in this model. This finding well illustrates that investment into improving the quality of service, diversification of products, and establishment of an attractive physical environment is itself, but these investments ultimately lead to improved Customer satisfaction in Order to Foster True Loyalty. This has discredited the traditional theory that only put emphasis on the improvement of functional dimensions and lays down the need for integrated and customer -oriented views in modern banking management.

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