

# Enhancing Customer Loyalty at the Indonesian Classification Bureau through Satisfaction Creation with Service Innovation and Service Quality

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## Abstract

The focus of this study delves into the intricate dynamics among service innovation, service quality metrics, customer satisfaction levels, and the resultant loyalty patterns observed within the Indonesian Classification Bureau. The study investigates the direct impact of service innovation on service quality, customer satisfaction, and loyalty, while also exploring how service quality and satisfaction act as mediators in these relationships. Through rigorous regression and mediation analyses, the research reveals that service innovation enhances service quality but does not directly affect satisfaction or loyalty. Notably, improved service quality significantly correlates with higher levels of satisfaction and loyalty, with satisfaction playing a pivotal role in strengthening loyalty. These findings underscore the mediating roles of service quality and satisfaction in shaping the impact of service innovation on customer loyalty. The study advocates prioritizing initiatives to enhance service quality and implement effective loyalty programs. Furthermore, it recommends future investigations into specific types of service innovations and additional mediating factors that influence customer loyalty dynamics.

**Keywords:** *Service innovation, service quality, customer satisfaction, customer loyalty, mediation analysis, Indonesian Classification Bureau.*

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## A. INTRODUCTION

Ship classification plays a pivotal role in the maritime industry as it involves categorizing vessels based on various technical standards and safety regulations (Fulconis & Lissillour, 2021). In order to maintain relevance and competitiveness amidst the challenges of the global marketplace, the Indonesian Classification Bureau should focus on improving its service quality and promoting innovation within its operations. Service quality includes factors such as reliability, responsiveness, assurance, empathy, and tangibles, all of which contribute to overall client satisfaction. Consistently providing high-quality services is essential for building trust and credibility with clients, which subsequently affects their loyalty and retention (Pakurár et al., 2019).

Moreover, innovation has emerged as a key driver of organizational success in a contemporary landscape marked by the swift pace of technological progress and evolving customer preferences (Omol, 2023). Adopting service innovation allows companies to stand out from competitors, to adapt to evolving market dynamics and adeptly meet the evolving demands and expectations of clientele (Farida & Setiawan, 2022). By continuously innovating its service offerings, the Indonesian Classification

Bureau can enhance its value proposition, attract new clients, and retain existing ones amidst intensifying competition. The ability to deliver superior service quality, coupled with a culture of innovation, holds the key to not only meeting the needs of stakeholders but also sustaining a competitive advantage in the market (Utami et al., 2023). In this context, the research aims to explore the complex relationships between service quality, service innovation, customer satisfaction, and ultimately their impact on customer loyalty within the context of the Indonesian Classification Bureau.

The quality of services provided in the maritime industry holds exceptional significance and plays a crucial role in the sector's overall performance and success, as it directly affects the safety, reliability, and overall satisfaction of ship owners, operators, and other stakeholders (Singh et al., 2023). Previous research has been conducted to discuss the role of business innovation (Abdirazak Mohamed & Unanoğlu, 2022; Awuku et al., 2023; Chen & Chen, 2023; Danjum & Rasli, 2012; Dao & Yang, 2014; Ekeke & Uboegbulam, 2021; Kurniawan et al., 2019; Mahmoud et al., 2018; Pranoto & Syahlani, 2021; Rahman et al., 2022; Sarah et al., 2022; Seesaiprai, 2016; State & Chain, 2022; Tarmidi & Salsabila, 2023; Valencia & Layman, 2021; Wonganawat et al., 2022). The creation of customer loyalty is significantly influenced by the quality of service and the level of customer satisfaction, which serve as essential determinants in fostering long-term customer allegiance (Abdirazak Mohamed & Unanoğlu, 2022; Dian Yoga Angga Wijaya, Abadi Sanosra, Sumadi, 2022; Surahman et al., 2020; Valencia & Layman, 2021; Wardaya Puspokusumo et al., 2022).

This research's primary aim is to comprehensively delve into multiple dimensions of service quality, and service innovation, and ultimately create loyalty among customers within the context of the Indonesian Classification Bureau. This research aims to achieve the following specific objectives:

1. To analyze in depth how service innovation influences the quality of services provided by the Indonesian Classification Bureau.
2. To analyze in depth how service innovation impacts customer satisfaction levels at the Indonesian Classification Bureau.
3. To analyze in depth how service innovation contributes to the development of customer loyalty at the Indonesian Classification Bureau.
4. To analyze in depth how the quality of services affects customer satisfaction within the Indonesian Classification Bureau.
5. To analyze in depth how service quality influences the loyalty of customers at the Indonesian Classification Bureau.
6. To analyze in depth how customer satisfaction impacts the loyalty of customers at the Indonesian Classification Bureau.
7. To analyze in depth whether service quality serves as an intermediary between service innovation and customer loyalty at the Indonesian Classification Bureau.
8. To analyze in depth whether customer satisfaction acts as a mediator between service innovation and customer loyalty at the Indonesian Classification Bureau.

The theoretical model examines the complex relationships among SQ (Service Quality), SI (Service Innovation), CS (Customer Satisfaction), and CL (Customer Loyalty) in the context of the Indonesian Classification Bureau (BKI).

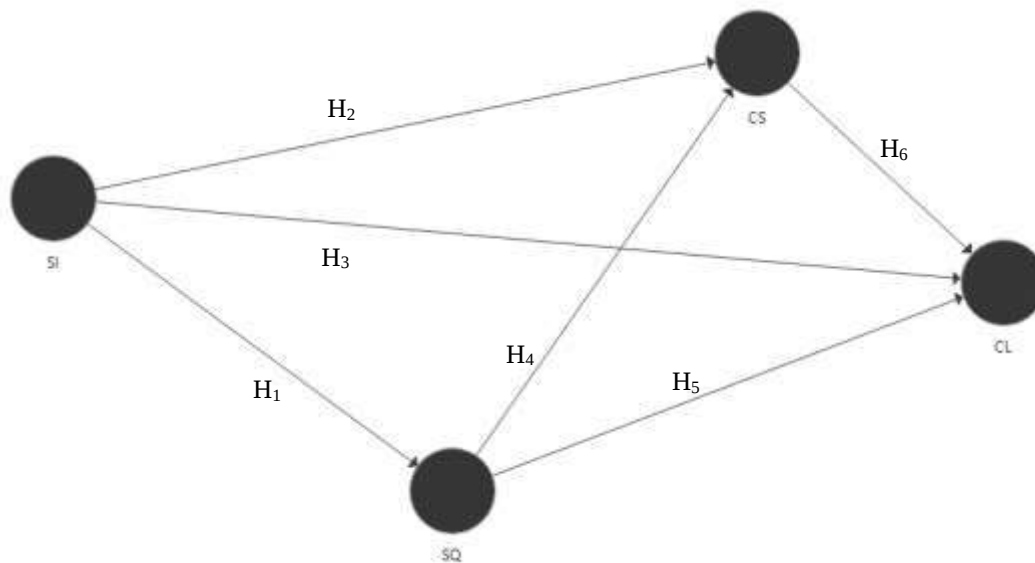


Figure 1 Conceptual framework

The hypotheses proposed in this study are:

- H1:** Service innovation impacts service quality at the Indonesian Classification Bureau.
- H2:** Service innovation impacts customer satisfaction at the Indonesian Classification Bureau.
- H3:** Service innovation impacts customer loyalty at the Indonesian Classification Bureau.
- H4:** Service quality impacts customer satisfaction at the Indonesian Classification Bureau.
- H5:** Service quality impacts customer loyalty at the Indonesian Classification Bureau.
- H6:** Customer satisfaction impacts customer loyalty at the Indonesian Classification Bureau.
- H7:** Within the Indonesian Classification Bureau, service quality plays a pivotal role as a mediator that influences the connection between service innovation and the establishment of customer loyalty.
- H8:** Within the Indonesian Classification Bureau, the level of customer satisfaction serves as a critical mediator in shaping the relationship between service innovation and the cultivation of customer loyalty.

## B. RESEARCH METHODS

The conducted research falls within the realm of quantitative inquiry utilizing causal methodologies. The study encompasses a diverse demographic comprising of consumers who have utilized the class acceptance services of the Indonesian Classification Bureau. Ship owners or at least shipyard operators who have utilized the class acceptance services of the Indonesian Classification Bureau are the

individuals responding to the questions. The next step involves selecting the research sample. In this study, purposive sampling is utilized to select data for examination. This method involves selecting samples based on specific criteria, particularly focusing on customers who have utilized the class acceptance services of the Indonesian Classification Bureau.

This research categorizes variables as exogenous, endogenous, or mediators. Service innovation is an exogenous variable, acting independently to influence other variables. Customer loyalty is the endogenous variable, affected by other factors. Mediator variables, like service quality and customer satisfaction, intervene between exogenous and endogenous variables. This research employs a combination of analytical methodologies, including exploratory data analysis for uncovering patterns and trends, and inferential statistics to draw conclusions and make predictions based on the data collected. Descriptive statistics summarize and interpret numerical data using graphs and calculations. Inferential statistics draw conclusions about populations or processes based on sample data (Kazmier, 2012).

## **C. RESULT AND DISCUSSION**

### **1. Research Results**

The dataset includes mean and standard deviation values for four key variables examined in the research. Service Innovation is rated with a mean score of 5.0031 and a standard deviation of 0.90173, indicating a moderate level of innovation with some variability in responses. Service Quality scores slightly higher with a mean of 5.1769 and a standard deviation of 0.78765, suggesting perceived quality is higher and responses are less varied compared to Service Innovation. Customer Satisfaction shows a mean score of 5.1487 and a standard deviation of 0.91293, indicating a high level of satisfaction with moderate variability among responses. Customer Loyalty, with a mean score of 4.9385 and a standard deviation of 0.85434, shows slightly lower loyalty compared to the other factors, with responses moderately varying. In sum, these findings offer valuable insights into the effectiveness of service innovation, service quality, customer satisfaction, and customer loyalty within the scope of this study.

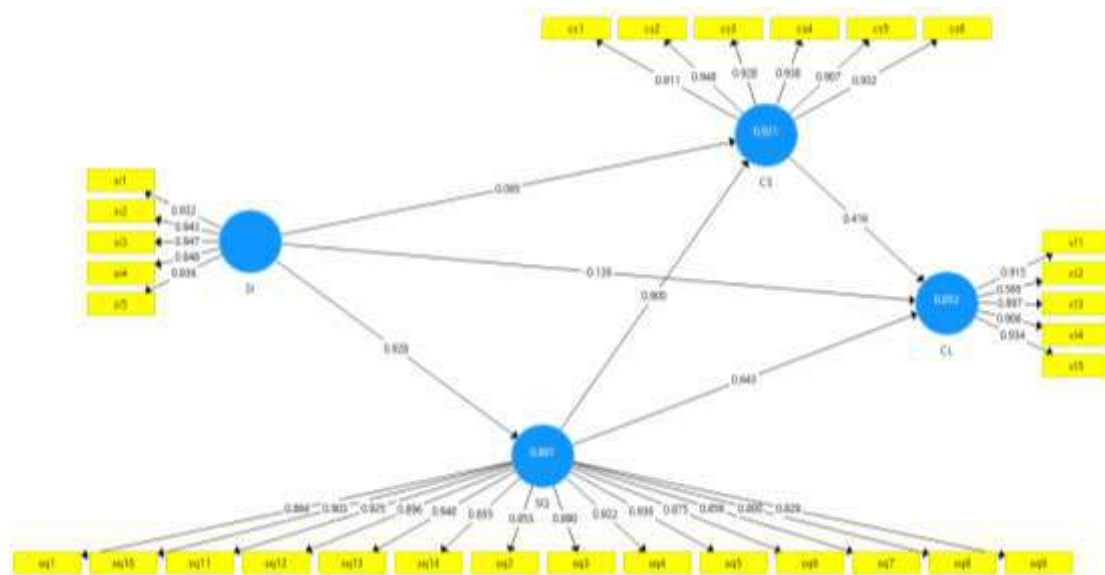


Figure 2 Model Construction

Given the structure of the model presented above, the following equation can be formulated:

$$SQ = 0,928 SI$$

$$CS = 0,065 SI + 0,900 SQ$$

$$CL = -0,136SI + 0,643SQ + 0,416CS$$

Information:

SI = "Service Innovation"

SQ = "Service Quality"

CS = "Customer Satisfaction"

CL = "Customer Loyalty"

The evaluation of validity and reliability for the variables considered in this study involves a rigorous examination aimed at ensuring the accuracy, consistency, and robustness of the measurements employed. All variables demonstrated satisfactory performance regarding construct validity, as evidenced by loading values exceeding 0.5 and significant p-values below 0.05. These findings confirm that each indicator effectively measures constructs like: Service Innovation, Service Quality, Customer Satisfaction, and Customer Loyalty are integral components incorporated within the framework of the study. These elements are intricately analyzed to discern their interrelationships and impacts within the broader context of the research model. For construct reliability, all variables showed strong consistency. The measurement model in this study demonstrates strong reliability and validity, as evidenced by Composite Reliability and Cronbach's Alpha scores surpassing the 0.70 threshold, indicating high internal consistency. Moreover, all constructs exhibit Average Variance Extracted (AVE) values exceeding 0.50, affirming excellent convergent validity. These findings collectively underscore the robustness and credibility of the measurement framework employed in this research.

Assessing structural models with PLS involves evaluating the model's predictive accuracy, typically measured by the R Square values of each endogenous

variable. High R Square values, like 0.75, indicate strong predictive capability, values around 0.50 suggest moderate strength, and values near 0.25 indicate weaker predictive ability. These metrics show how well the model explains and predicts relationships among variables (Sugiono, 2018; Alimudin et al., 2022). To ensure a good fit, the Structural Model Similarity Ratio (SMSR) score should be below 0.1 (Backer et al, 2018; Alimudin et al., 2022).

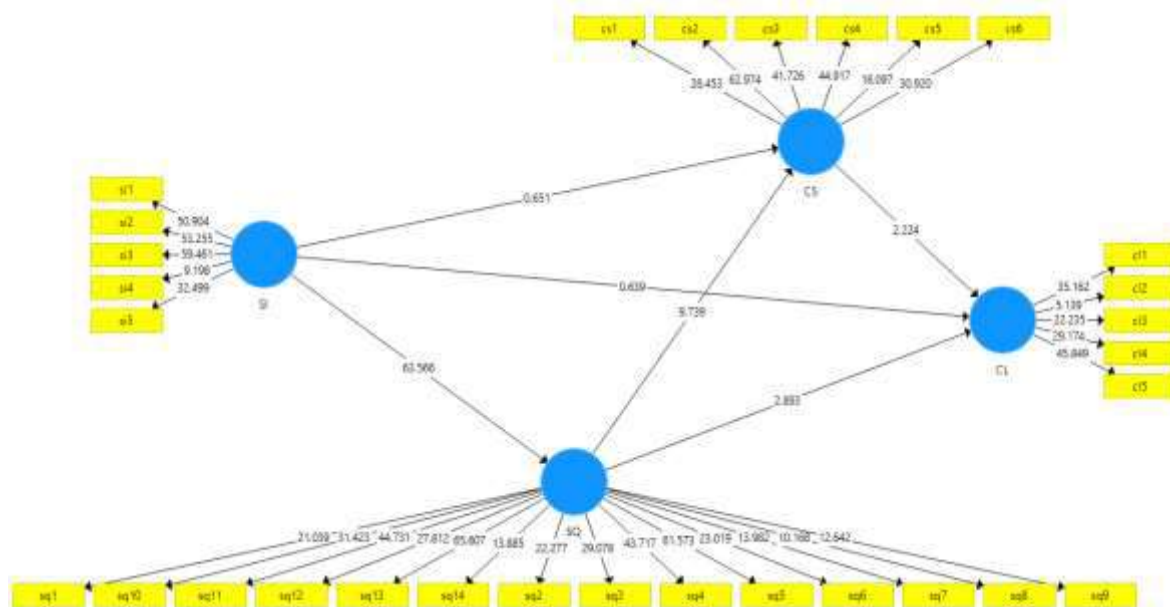


Figure 3 Inner Model

#### a. R Square

The study offers profound insights into the interplay among service innovation as an exogenous variable, service quality, which acts as a mediator, customer satisfaction also as a mediator, and customer loyalty as the endogenous variable. Service innovation emerges as a pivotal catalyst for enhancing service quality, elucidating a significant 86.1% variance explained (adjusted R Square: 85.9%). Together, service innovation and service quality wield substantial influence on customer satisfaction, capturing an impressive 92.1% variance (adjusted R Square: 91.9%). Furthermore, the combined impact of service innovation, service quality, and customer satisfaction on cultivating customer loyalty is notable, explaining 85.3% variance (adjusted R Square: 84.6%). These findings underscore the model's robust explanatory power in illuminating the intricate relationships and outcomes among these critical dimensions within the study context (Backer et al, 2018; Alimudin et al., 2022).

#### b. Fit Model

The SMSR value is 0.061, which exceeds the acceptable limit of 0.05, but the model still fits the data adequately. The NFI value is 0.677, meeting the criteria for model fit despite not reaching 1. The SRMR for both the Saturated Model and the Estimated Model is 0.061, indicating a satisfactory fit since this value should be below 0.08. The Chi-Square value for both models is 1222.141, suggesting a similar level of fit. Overall, the fit model analysis using SMART PLS confirms that the model fits the data adequately.

## c. Research Hypothesis Testing

Table 1 Testing Hypothesis Research

|                                             | Coefficient | P Values | Limit Value |
|---------------------------------------------|-------------|----------|-------------|
| Service Innovation -> Service Quality       | 0.928       | 0.000    | 0,05        |
| Service Innovation -> Customer Satisfaction | 0.065       | 0.515    | 0,05        |
| Service Innovation -> Customer Loyalty      | -0.136      | 0.523    | 0,05        |
| Service Quality -> Customer Satisfaction    | 0.900       | 0.000    | 0,05        |
| Service Quality -> Customer Loyalty         | 0.643       | 0.004    | 0,05        |
| Customer Satisfaction -> Customer Loyalty   | 0.416       | 0.027    | 0,05        |

Source: Data processed 2024

Table 1 summarizes the findings from hypothesis testing in this study, examining relationships among variables. Statistical significance was assessed using p-values, typically set at 0.05. Service Innovation significantly enhances Service Quality at the Indonesian Classification Bureau, as evidenced by a coefficient of 0.928 and a p-value of 0.000, indicating substantial improvement in service quality.

However, Service Innovation does not significantly influence Customer Satisfaction (coefficient = 0.065, p-value = 0.515) or Customer Loyalty (coefficient = -0.136, p-value = 0.523) at the Indonesian Classification Bureau, suggesting minimal direct impact on these variables. On the other hand, Service Quality significantly enhances both Customer Satisfaction (coefficient = 0.900, p-value = 0.000) and Customer Loyalty (coefficient = 0.643, p-value = 0.004), indicating a strong positive relationship between service quality and these outcomes.

Moreover, Customer Satisfaction also significantly enhances Customer Loyalty (coefficient = 0.416, p-value = 0.027), demonstrating that higher satisfaction levels correlate with increased loyalty.

Table 2, derived from SMART PLS data, reveals the indirect effects of various factors on customer loyalty via intermediary variables. The analysis of coefficients and p-values provides the following insights.

Table 2 Indirect influence

| Indirect Influence                                                                 | Coefficient | P Values |
|------------------------------------------------------------------------------------|-------------|----------|
| Service Innovation -> Customer Satisfaction -> Customer Loyalty                    | 0,027       | 0,519    |
| Service Quality -> Customer Satisfaction -> Customer Loyalty                       | 0,374       | 0,044    |
| Service Innovation -> Service Quality -> Customer Satisfaction -> Customer Loyalty | 0,347       | 0,043    |
| Service Innovation -> Service Quality -> Customer Loyalty                          | 0,596       | 0,004    |
| Service Innovation -> Service Quality -> Customer Satisfaction                     | 0,835       | 0,000    |

Source: Data processed 2024

Firstly, the pathway from Service Innovation of the Indonesian Classification Bureau to Customer Satisfaction to Customer Loyalty shows a weak positive influence, but it is not statistically significant (coefficient = 0.027,  $p = 0.519$ ). Secondly, Service Quality of the Indonesian Classification Bureau has a positive impact on Customer Loyalty through Customer Satisfaction, with a moderate and statistically significant influence (coefficient = 0.374,  $p = 0.044$ ). Thirdly, the route from Service Innovation through Service Quality of the Indonesian Classification Bureau to Customer Satisfaction and then to Customer Loyalty demonstrates a significant positive influence (coefficient = 0.347,  $p = 0.043$ ). Additionally, there is a strong positive indirect effect of Service Innovation of the Indonesian Classification Bureau on Customer Loyalty through Service Quality (coefficient = 0.596,  $p = 0.004$ ). Lastly, Service Innovation of the Indonesian Classification Bureau significantly impacts Customer Satisfaction through Service Quality, showing a substantial positive effect (coefficient = 0.835,  $p < 0.001$ ). Overall, these results highlight the crucial role of service innovation and quality of the Indonesian Classification Bureau in enhancing customer satisfaction and loyalty, suggesting that businesses should focus on these areas to improve customer experiences and retention.

Table 3 Total influence

| Total Influence                             | Coefficient | P Values |
|---------------------------------------------|-------------|----------|
| Customer Satisfaction -> Customer Loyalty   | 0.416       | 0.027    |
| Service Innovation -> Customer Loyalty      | 0.834       | 0.000    |
| Service Innovation -> Customer Satisfaction | 0.899       | 0.000    |
| Service Innovation -> Service Quality       | 0.928       | 0.000    |
| Service Quality -> Customer Loyalty         | 1.017       | 0.000    |
| Service Quality -> Customer Satisfaction    | 0.900       | 0.000    |

Source: Data processed 2024

Table 3 summarizes the impact of key factors on customer loyalty based on data processed in 2024 using SMART PLS. Each row details a direct influence pathway, including the coefficient and p-value. Customer Satisfaction at the Indonesian Classification Bureau positively influences Customer Loyalty with a coefficient of 0.416, indicating a moderate correlation. This suggests that higher satisfaction levels typically lead to increased customer loyalty, supported by a statistically significant p-value of 0.027.

Service Innovation at the Indonesian Classification Bureau significantly enhances Customer Loyalty with a coefficient of 0.834, indicating a strong positive impact. Companies focusing on innovation tend to experience higher levels of customer loyalty, underscored by a p-value of 0.000. Similarly, Service Innovation positively affects Customer Satisfaction with a coefficient of 0.899, indicating that innovative service provision enhances customer satisfaction levels significantly ( $p\text{-value} = 0.000$ ).

Furthermore, Service Innovation correlates strongly with Service Quality at the Indonesian Classification Bureau, with a coefficient of 0.928 and a p-value of 0.000.

This suggests that innovative practices contribute to higher service quality standards. Service Quality also strongly influences both Customer Loyalty (coefficient = 1.017, p-value = 0.000) and Customer Satisfaction (coefficient = 0.900, p-value = 0.000). Enhanced service quality fosters increased customer loyalty and satisfaction, emphasizing its critical role in customer relationship management.

## 2. Discussion

Service innovation significantly enhances service quality at the Indonesian Classification Bureau, as evidenced by a coefficient of 0.928 and a p-value of 0.000. Service innovation involves introducing new or improved services to meet evolving customer needs, such as implementing new technology or novel service delivery methods. Service quality, on the other hand, refers to how well services meet customer expectations across dimensions like reliability, responsiveness, and empathy (Farida & Setiawan, 2022; Lubis, 2022; Rane et al., 2023). For example, implementing new CRM software in a customer service department can improve responsiveness, personalize services, streamline processes, and enhance customer satisfaction (Bhat & Sharma, 2021; Mahavarpour et al., 2023; Sharma & Bhat, 2020).

Service innovation's impact on customer satisfaction within the Indonesian Classification Bureau was examined, revealing a minimal influence with a coefficient of 0.065 and a non-significant p-value of 0.515. This suggests that variations in service innovation do not significantly affect customer satisfaction levels. Service innovation involves introducing new or enhanced services to meet evolving customer needs, while customer satisfaction reflects how well a company's offerings meet customer expectations (Abdirazak Mohamed & Unanoğlu, 2022; Chen & Chen, 2023; Mahmoud et al., 2018; Pranoto & Syahlani, 2021; State & Chain, 2022). The findings underscore a negligible association between service innovation and customer satisfaction, emphasizing that other factors like pricing, product quality, or customer service may play a more substantial role in shaping satisfaction levels. If innovations fail to align with customer expectations, their impact on satisfaction may be limited despite their introduction.

The impact of service innovation on customer loyalty at the Indonesian Classification Bureau was investigated, revealing a negligible effect with a coefficient of -0.136 and a non-significant p-value of 0.523. This indicates that changes in service innovation do not significantly influence customer loyalty directly within the organization. Customer loyalty, defined as customers' sustained preference for a company's products or services over time, is influenced by various factors beyond service innovation alone (Abdirazak Mohamed & Unanoğlu, 2022; Awuku et al., 2023; Rahman et al., 2022; Seesaiprai, 2016; Valencia & Layman, 2021; Wonganawat et al., 2022). Factors such as product quality, pricing, customer service, brand reputation, and overall customer experience play crucial roles in shaping customer loyalty. While service innovation may initially enhance customer satisfaction, its impact on loyalty may require more time as customers assess and integrate these innovations into their

perceptions and preferences. In competitive industries, customers may be less loyal and more likely to switch providers based on factors like price and convenience.

In examining the data, a compelling and statistically robust positive correlation between service quality and customer satisfaction is evident at the Indonesian Classification Bureau, supported by a substantial coefficient of 0.900 and a highly significant p-value of 0.000. This finding underscores that enhancements in service quality directly translate into heightened levels of customer satisfaction. Service quality represents the extent to which a company's services meet or surpass customer expectations, while customer satisfaction gauges the extent to which customers feel fulfilled with a company's offerings. By improving service quality, organizations not only elevate customer satisfaction internally but also cultivate customer loyalty and positive word-of-mouth referrals externally. This, in turn, bolsters the company's competitive standing and long-term sustainability in the marketplace. The correlation between service quality and customer satisfaction thus highlights a critical pathway for organizations to enhance their overall customer experience and strategic positioning in the industry (Ali et al., 2021; Nor et al., 2022; Pakurár et al., 2019; Zhang et al., 2022).

Upon detailed examination, the analysis underscores a noteworthy and statistically significant positive association between service quality and customer loyalty within the Indonesian Classification Bureau. This is underscored by a substantial coefficient of 0.643 and a statistically significant p-value of 0.004, indicating that enhancements in service quality are linked to heightened levels of customer loyalty. Service quality encompasses the extent to which a company's services align with and exceed customer expectations, serving as a pivotal determinant of customer satisfaction and loyalty. Customer loyalty, on the other hand, denotes the propensity of customers to consistently favor and endorse a specific company due to positive experiences and perceived value.

By improving service quality, organizations not only enhance customer satisfaction but also foster stronger customer loyalty, which in turn augments customer retention, advocacy, and overall business performance. This positive relationship underscores the strategic importance of prioritizing service quality as a cornerstone of long-term customer relationship management and competitive advantage in the marketplace. The findings underscore that enhancing service quality is pivotal in fostering greater customer loyalty within the organization (Deka, 2016; Naik et al., 2010; Rane et al., 2023). Increased customer loyalty translates into sustained usage of the Indonesian Classification Bureau's services, contributing to higher repeat business and revenue. Satisfied and loyal customers are also likely to recommend the company positively, potentially attracting new customers through word-of-mouth. By prioritizing service quality improvements, the Indonesian Classification Bureau can reduce customer turnover, maintain a loyal customer base, and nurture lasting customer relationships (Abdirazak Mohamed & Unanoğlu, 2022; Rahman et al., 2022; Wardaya Puspokusumo et al., 2022).

The analysis delves into the intricate relationship between customer satisfaction and customer loyalty within the Indonesian Classification Bureau, unveiling compelling insights into how customer satisfaction significantly impacts loyalty. This relationship is underscored by a notable coefficient of 0.416 and a statistically significant p-value of 0.027, indicating that higher levels of customer satisfaction correlate with increased customer loyalty. Customer satisfaction measures the degree of contentment customers experience following their interactions with a company's products or services. It serves as a barometer of how well the company meets customer expectations and fulfills their needs. On the other hand, customer loyalty reflects the inclination of customers to consistently choose and support a specific company over competitors, driven by positive experiences, perceived value, and emotional connections.

The findings highlight a meaningful correlation between customer satisfaction and loyalty within the organization, supported by a moderate positive coefficient and a statistically significant p-value below 0.05. Satisfied customers are not only more likely to make repeat purchases but also contribute to higher levels of customer retention and act as advocates for the company, promoting it through positive word-of-mouth referrals. This fosters stable and enduring customer relationships, enhancing the company's reputation and competitiveness in the marketplace (Aka et al., 2016; Hidayati, 2021; Lam et al., 2004; Mazhar et al., 2022; Rahman et al., 2022; Wardaya Puspokusumo et al., 2022).

In this study, an in-depth exploration is conducted into the complex interplay among service innovation, service quality, and customer loyalty within the operational framework of the Indonesian Classification Bureau. The primary focus centers on investigating whether service quality acts as a mediator in shaping the influence of service innovation on customer loyalty. The findings illuminate a compelling narrative where service innovation emerges as a potent driver of customer loyalty, primarily facilitated through its profound impact on enhancing service quality. The analysis reveals a robust and statistically significant positive relationship, characterized by a substantial coefficient of 0.928 and a highly noteworthy p-value of 0.000. These results underscore the pivotal role of service quality as a pivotal intermediary mechanism in this relationship, underscoring its critical importance in the context of organizational strategy and customer relationship management. Furthermore, the study delves into how service innovation initiatives not only bolster service quality but also engender higher levels of customer satisfaction and loyalty. This holistic understanding provides valuable insights into how organizations can strategically leverage service innovation to fortify their competitive edge, enhance customer engagement, and foster sustained growth in dynamic market environments (Afaf & Marsasi, 2023).

These results emphasize that service quality plays a pivotal role in translating improvements from service innovation into increased customer loyalty within the Indonesian Classification Bureau. Enhancements in service quality, driven by innovative practices, contribute to a superior customer experience, fostering trust and

satisfaction. By prioritizing innovative approaches to enhance service quality, the Indonesian Classification Bureau can strengthen customer loyalty, building enduring relationships and sustaining competitive advantage (Tedjokusumo & Murhadi, 2023).

This study delves deeply into the multifaceted dynamics of service innovation and its profound implications for customer loyalty, particularly through its intricate relationship with customer satisfaction at the Indonesian Classification Bureau. The research endeavors to elucidate the pathways through which service innovation exerts its influence on customer loyalty indirectly, primarily by enhancing levels of customer satisfaction. The findings underscore a compelling narrative where service innovation emerges as a pivotal catalyst for bolstering customer loyalty through its direct impact on elevating customer satisfaction levels. The analysis uncovers a robust and statistically significant positive correlation among service innovation, customer satisfaction, and customer loyalty, as evidenced by a substantial coefficient of 0.899 and an exceptionally significant p-value of 0.000.

These results highlight the transformative potential of service innovation initiatives in not only improving service offerings but also in cultivating deeper customer satisfaction and loyalty. By fostering innovation-driven enhancements in service quality, responsiveness, and overall customer experience, organizations can strategically position themselves to not only retain existing clientele but also attract new customers and sustain long-term growth and competitiveness in the marketplace. This indicates that innovations in services lead to higher customer satisfaction levels, fostering increased loyalty among customers. By prioritizing innovative practices that enhance customer satisfaction, the Indonesian Classification Bureau can cultivate lasting relationships and loyalty among its customer base (Rane et al., 2023; Zhang et al., 2022).

#### **D. CONCLUSION**

Drawing from the hypotheses and empirical data, several significant conclusions can be drawn regarding the intricate interrelationships among service innovation, service quality, customer satisfaction, and loyalty within the operational context of the Indonesian Classification Bureau. Firstly, while service innovation is found to enhance service quality within the organization, it does not exert a direct influence on either customer satisfaction or customer loyalty. Rather, the impact of service innovation on customer loyalty is primarily mediated through its enhancement of service quality.

Secondly, service quality emerges as a pivotal determinant, significantly influencing both customer satisfaction and loyalty. The analysis reveals a robust positive relationship where higher levels of service quality are associated with increased customer satisfaction and stronger loyalty among customers. Moreover, the study underscores the critical role of customer satisfaction as a key driver of customer loyalty. The findings indicate that satisfied customers are more likely to exhibit loyalty behaviors, such as repeat purchases and positive word-of-mouth recommendations.

Furthermore, the research identifies dual mediation effects in the relationship between service innovation and customer loyalty. On one hand, service quality acts as an intermediary mechanism through which service innovation indirectly affects customer loyalty. On the other hand, customer satisfaction also plays a mediating role, reinforcing the link between service innovation initiatives, customer satisfaction levels, and subsequent customer loyalty outcomes. These insights highlight the nuanced dynamics at play within the Indonesian Classification Bureau, emphasizing the strategic importance of enhancing service quality and fostering customer satisfaction as integral components of organizational strategies aimed at cultivating enduring customer loyalty and competitive advantage in the marketplace. These findings underscore the complex dynamics among these factors, highlighting their nuanced interactions that influence organizational outcomes and customer relationships.

Based on these findings, strategic recommendations for the Indonesian Classification Bureau include prioritizing continuous innovation in service delivery to enhance performance. Investing in cutting-edge technologies, process improvements, and innovative service offerings can maintain competitiveness and meet evolving customer expectations. Simultaneously, efforts to improve service quality across all touchpoints with robust protocols, staff training, and proactive customer feedback are crucial. Although direct impact of service innovation on customer satisfaction may be limited, efforts to exceed customer expectations remain crucial. Strengthening customer loyalty through enhanced programs and incentives can foster enduring relationships. Future research should delve deeper into specific types of service innovations and their impacts on service quality, satisfaction, and loyalty within the context of the Indonesian Classification Bureau. Understanding how service quality and satisfaction mediate relationships can provide insights into customer behavior dynamics over time. Comparative research across industries can offer benchmarking and adaptation strategies to optimize these interrelationships, ensuring sustained organizational success.

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