

HOW OPERATIONAL GOVERNANCE DRIVES PERFORMANCE AND RESILIENCE IN BANK BUMN: THE MEDIATING ROLE OF SERVICE QUALITY

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Abstract

Bank BUMN play a critical role in maintaining national financial stability, yet they remain highly exposed to operational disruptions driven by escalating cyber threats. Despite regulatory efforts to strengthen banking resilience, empirical evidence on how operational governance shapes both operational performance and resilience, particularly through the mediating role of service quality, remains limited in the Indonesian context. This study investigates the influence of operational governance on operational performance and operational resilience, with service quality as a mediating variable. Grounded in Resource-Based View (RBV) theory, operational governance is conceptualized as a strategic internal resource, while service quality represents the organizational capability that channels governance into superior operational outcomes. A quantitative survey was conducted among operational employees of Bank BUMN in Indonesia, with data analyzed using Partial Least Square-Structural Equation Modeling (PLS-SEM). This study contributes to the operational management literature by offering an integrated empirical model that simultaneously examines direct and mediated pathways, providing actionable insights for strengthening governance and resilience in Indonesian Bank BUMN.

Keywords: operational governance, service quality, operational performance, operational resilience, Bank BUMN

INTRODUCTION

The rapid digitalization of financial services has fundamentally transformed banking operations, bringing both unprecedented opportunities and heightened vulnerabilities. Cyber threats targeting banking infrastructure have grown in scale and sophistication, with Indonesia's National Cyber and Crypto Agency (BSSN) recording over 330 million network traffic anomalies in 2024, with the financial sector among the most frequently targeted (Badan Siber dan Sandi Negara, 2024).

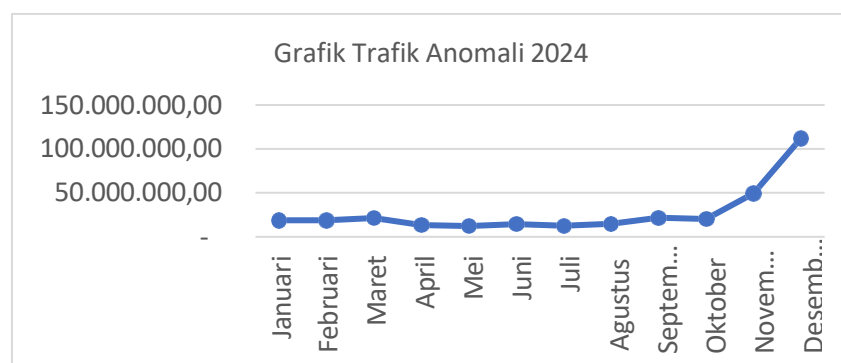


Figure 1. Indonesia's Anomalous Traffic Graph in 2024

Source: Badan Siber dan Sandi Negara

Such disruptions extend well beyond technical failures, they threaten service continuity, inflate

recovery costs, and risk permanent erosion of public trust. For Bank BUMN, which bear the responsibility of serving millions of customers at a national scale, these challenges underscore the strategic urgency of robust operational governance.

Previous studies have demonstrated positive linkages between governance mechanisms and organizational performance and resilience. Syahrir DM (2023) indicated that strong governance significantly enhances operational performance, while Lv et al. (2023) demonstrated that both contractual and relational governance positively influence operational resilience. However, current research generally analyzes these relationships in isolation, predominantly focusing on financial performance metrics without incorporating service quality as an intermediary mechanism. No study has provided a cohesive empirical model that simultaneously tests the mediating role of service quality between operational governance and both operational performance and resilience, particularly within the regulatory and institutional context of Indonesian state-owned banks.

This study fills that gap by proposing and empirically evaluating a model, grounded in Resource-Based View (RBV) theory (Barney, 1991). In this context, operational governance is viewed as a valuable, rare, inimitable, and non-substitutable internal resource, while service quality signifies the organizational capability that transforms governance into quantifiable operational outcomes (Grant, 1991). The findings are intended to enrich the operational management literature with context-specific empirical evidence and to provide Bank BUMN with actionable strategic guidance for strengthening governance, service delivery, and operational resilience.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Resource-Based View (RBV) Theory

This study is grounded in Resource-Based View (RBV) theory, which posits that sustained competitive advantage derives from internal resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). In the banking context, operational governance constitutes such a resource, one that is deeply embedded in organizational routines and difficult for competitors to replicate. Service quality, in turn, represents the dynamic capability through which governance resources are converted into superior operational outcomes (Grant, 1991). This theoretical lens provides the foundation for examining how governance mechanisms translate into measurable performance and resilience gains through service quality as an intermediary.

Operational Governance

Operational governance refers to a structured system of internal controls that regulates organizational work processes to ensure sustained effectiveness, efficiency, and regulatory compliance (BCBS, 2021). In the banking sector, its implementation encompasses standard operating procedures, risk-based controls, hierarchical reporting systems, and periodic audits. This study operationalizes operational governance using five dimensions proposed by Alsaleem et al. (2023): planning and organization, acquisition and implementation, service delivery and support, monitoring and evaluation, and guidance and control.

Service Quality

Service quality reflects the extent to which delivered services meet or exceed customer expectations (Parasuraman et al., 1988). This study adopts the Bank Service Quality (BSQ) model developed by Bahia & Nantel, (2000), which captures banking service quality across six dimensions: effectiveness and assurance, access, price, tangibles, service portfolio, and reliability. This model was selected for its specificity to the banking sector and its demonstrated reliability across diverse institutional contexts.

Operational Performance

Operational performance refers to an organization's capacity to execute its core processes effectively and efficiently in pursuit of defined objectives. Laczynski et al. (2011) conceptualize it through four interrelated dimensions: cost, quality, flexibility, and delivery. In this study, operational performance is positioned as a dependent variable shaped by operational governance

both directly and indirectly through service quality.

Operational Resilience

Operational resilience denotes an organization's dynamic capacity to anticipate, absorb, adapt to, and recover from disruptions that threaten the continuity of critical functions (BCBS 2021, 2021). Lv et al. (2023) emphasize that resilience is not static but is actively constructed through resource reconfiguration and organizational cognition, both of which are shaped by prevailing governance mechanisms. This study measures operational resilience through five indicators: reserve resources, recovery, disruption absorption, operational efficiency, and disruption orientation (Essuman et al., 2020).

Based on the theoretical framework, the relationships between variables, and previous research findings, this study can be illustrated through the following research paradigm:

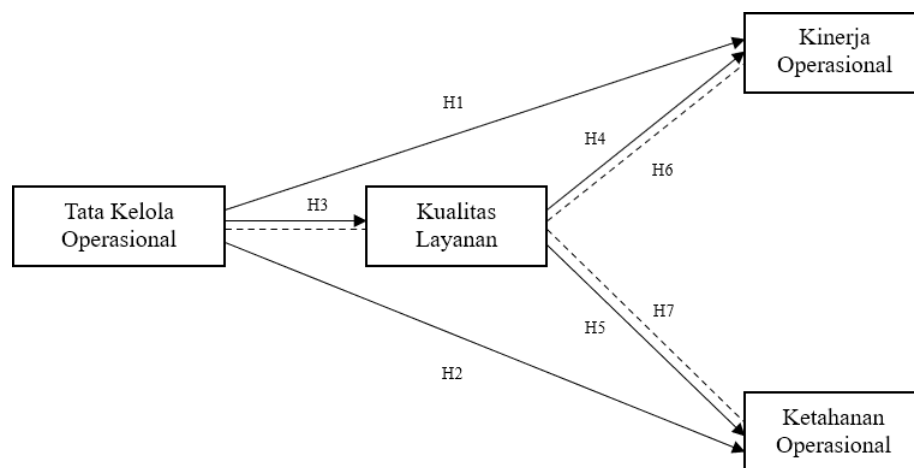


Figure 2. Conceptual Framework

Based on the explanation in the conceptual framework above, the following hypotheses can be formulated:

H1: Operational governance has a positive effect on operational performance.

Effective operational governance streamlines organizational processes, reduces inefficiencies, and promotes consistent adherence to standards, all of which directly contribute to improved operational performance. Syahrir DM, (2023) confirmed that governance mechanisms exert a significant positive influence on operational performance outcomes.

H2: Operational governance has a positive effect on operational resilience.

Well-structured governance equips organizations with systematic protocols for identifying, responding to, and recovering from operational disruptions. Lv et al. (2023) demonstrated that both contractual and relational governance mechanisms positively contribute to organizational resilience by enabling resource reconfiguration and adaptive cognition.

H3: Operational governance has a positive effect on service quality.

Governance principles such as transparency, accountability, and process standardization enable organizations to design, monitor, and continuously improve service delivery processes. Wahyuni & Cahyani, (2025) confirmed that stronger governance mechanisms are associated with consistently higher service quality outcomes.

H4: Service quality has a positive effect on operational performance.

Consistently high service quality reduces customer complaints, strengthens loyalty, and drives operational efficiency, collectively translating into superior organizational performance. Dewi, (2024) found a significant positive relationship between service quality and operational performance in banking institutions.

H5: Service quality has a positive effect on operational resilience.

Organizations that maintain high service quality standards demonstrate greater capacity to

withstand and recover from operational disruptions, as sustained service excellence reflects underlying organizational robustness. Aden & Muthimi, (2022) provided empirical evidence that service quality positively contributes to organizational resilience in financial service firms.

H6: Service quality mediates the effect of operational governance on operational performance.

H7: Service quality mediates the effect of operational governance on operational resilience.

Drawing on RBV theory, operational governance provides the foundational resources from which service quality capabilities are developed. These capabilities, in turn, serve as the mechanism through which governance gains translate into enhanced operational performance and resilience. Syahrir DM, (2023) and Dewi, (2024) support the mediating pathway toward performance, while Lv et al. (2023) and Aden & Muthimi, (2022) substantiate the resilience pathway.

RESEARCH METHODS

Research Design and Sample

This study employs a quantitative explanatory approach to empirically test causal relationships among operational governance, service quality, operational performance, and operational resilience. Data were collected through a structured questionnaire survey administered to operational employees of Bank BUMN in Indonesia, individuals directly involved in daily banking operations and customer service delivery. The minimum sample size was determined using the Cochran, (1977) formula, yielding 100 respondents, a threshold that simultaneously satisfies the minimum sample requirement for PLS-SEM estimation.

Research Design and Sample

The minimum sample size was determined using Cochran's (1977) formula for populations of unknown size:

$$n = \frac{z^2 \cdot p \cdot q}{e^2}$$

Where n is the minimum required sample size, z is the z-score corresponding to the 95% confidence level (1.96), p and q represent the estimated proportion of the population possessing and not possessing the attribute of interest (0.5 each, applied to maximize variance in the absence of prior estimates), and e is the acceptable margin of error (0.10). substituting these values:

$$n = \frac{(1,96)^2 \times 0,5 \times 0,5}{(0,10)^2} = \frac{0,9604}{0,01} = 96,04$$

Yielding a minimum required sample size of 96 respondents, a threshold that also satisfies the minimum sample requirement for PLS-SSEM estimation.

Measurement

All constructs were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Operational governance was measured using five dimensions proposed by Alsaleem et al. (2023): planning and organization, acquisition and implementation, service delivery and support, monitoring and evaluation, and guidance and control. Service quality was assessed using the Bank Service Quality (BSQ) model by Bahia & Nantel, (2000) across six dimensions: effectiveness and assurance, access, price, tangibles, service portfolio, and reliability. Operational performance was measured through four dimensions: cost, quality, flexibility, and delivery, adapted from Laczynski et al. (2011) Operational resilience was assessed using five indicators: reserve resources, recovery, disruption absorption, operational efficiency, and disruption orientation (Essuman et al., 2020).

Data Analysis

Data were analyzed using Partial Least Square-Structural Equation Modeling (PLS-SEM) with SmartPLS. PLS-SEM was selected for its suitability in handling complex structural models with

multiple latent variables and mediation pathways, its robustness to non-normal data distributions, and its appropriateness for relatively small sample sizes (Hair et al., 2019).

Outer model evaluation assessed convergent validity through indicator outer loadings (>0.70) and Average Variance Extracted (AVE >0.50), and discriminant validity through the Cross Loading. Construct reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR), both requiring values exceeding 0.70. Inner model evaluation examined the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and Variance Inflation Factor (VIF <5.0) to detect multicollinearity.

Hypothesis testing was conducted via bootstrapping with 5,000 subsamples, with hypotheses supported when t-statistic >1.645 or p-value <0.05 (Hair et al., 2019). Mediation effects were assessed through indirect effect significance testing using bootstrapping procedures (Preacher & Hayes, 2008), with full mediation established when the direct effect is non-significant but the indirect effect is significant, and partial mediation when both effects are significant.

RESULTS AND DISCUSSION

Sample Description

Of the 95 responses collected, 4 were excluded following a straightlining check, leaving 91 valid responses used for analysis. Although slightly below the initial target of 100 respondents set by Cochran's (1977) formula, this sample size goes beyond the minimum threshold required for PLS-SEM estimation (Hair 2019). The majority of respondents were female (54.9%), aged between 25-30 years (44.0%), had 1-3 years of experience (42.9%), and holding staff-level positions (64.8%).

Measurement Model (Outer Model)

Table 1. Validity Convergen Test Result

	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
M	0.911	0.914	0.927	0.587
X	0.889	0.891	0.912	0.565
Y1	0.870	0.873	0.900	0.564
Y2	0.900	0.908	0.919	0.560

Source: SmartPLS Outer Model Test Result

Convergent validity was confirmed: 33 of 40 indicators (80%) exceeded the recommended outer loading threshold of 0.70, while the remaining eight were retained within the 0.40-0.70 range due to their satisfactory contribution to composite reliability (Hair 2019). Composite Reliability (0.900-0.927), Cronbach's Alpha (0.870-0.911), and AVE (0.560-0.587) all surpassed their respective benchmarks across the four constructs, affirming sufficient reliability and convergent validity. Discriminant validity was evaluated through cross-loading, resulting in the removal of seven indicators that loaded more strongly on constructs other than their designated ones, which left 33 indicators that each had the highest loading on their intended constructs.

Structural Model (Inner Model)

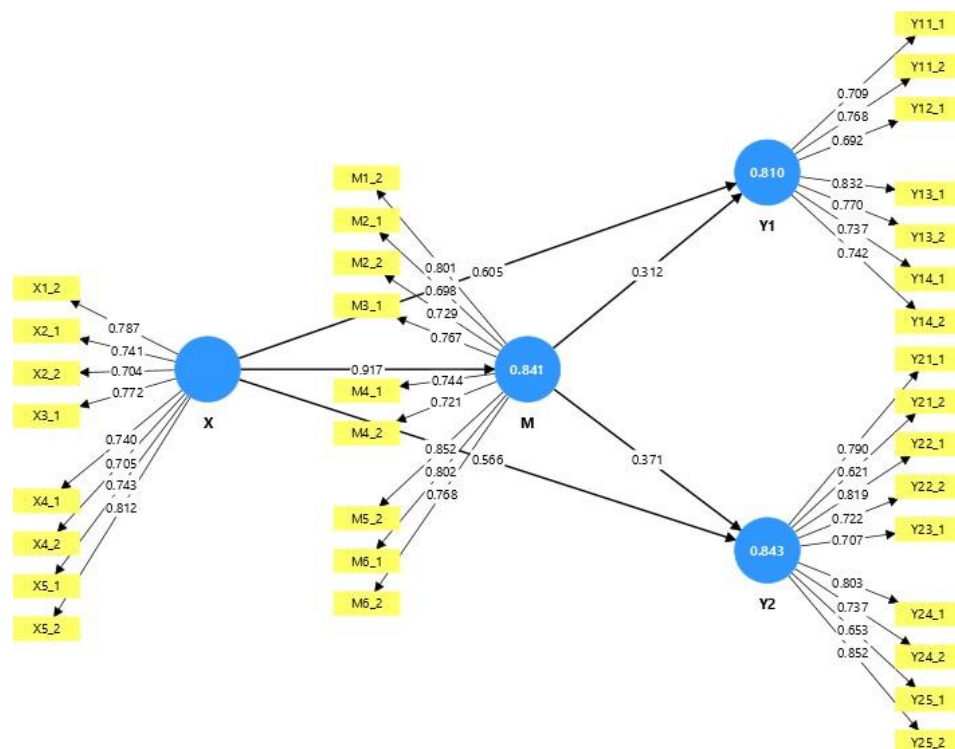


Figure 3. Graphical Output
 Source: SmartPLS

Figure 3 presents the complete PLSS-SEM algorithm output, displaying both the outer model (indicator loadings) and inner model (path coefficients and R^2 values) simultaneously. The R^2 values obtained for service quality (M), operational performance (Y1), and operational resilience (Y2) were 0.841, 0.810, and 0.843 respectively, indicating a substantial level of explanatory power. Detailed path coefficients and outer loadings illustrated in this figure are further elaborated in Tables 1 through 4.

Table 2. R-Square Result

	R-Square	R-Square adjusted
M	0.841	0.839
Y1	0.810	0.805
Y2	0.843	0.840

Source: SmartPLS Inner Model Test Result

Table 3. f-Square Result

	M	X	Y1	Y2
M			0.081	0.140
X	5.290		0.306	0.325
Y1				
Y2				

Source: SmartPLS Inner Model Test Result

R^2 values were 0.841 for service quality, 0.810 for operational performance, and 0.843 for operational resilience, all classified as substantial. Effect size (f^2) indicated that operational governance exerted a very large effect on service quality (5.290) and a moderate-to-large effect on both performance (0.306) and resilience (0.325), while service quality's effect on performance

(0.081) and resilience (0.140) was comparatively small. VIF values ranged from 1.538 to 3.191, well below the 5.0 threshold, indicating no multicollinearity concerns.

Hypothesis Testing

Table 4. Path Coefficients and Specific Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistic	P value
M-> Y1	0.312	0.309	0.139	2.241	0.013
M-> Y2	0.371	0.385	0.134	4.514	0.000
X->M	0.917	0.912	0.132	2.823	0.002
X-> Y1	0.605	0.600	0.130	4.356	0.000
X->Y2	0.566	0.549	0.032	28.579	0.000
X-> M->Y1	0.286	0.283	0.129	2.220	0.013
X-> M-> Y2	0.340	0.353	0.125	2.732	0.003

Source: SmartPLS Path Coefficients and Specific Indirect Effect Test Result

All seven hypotheses were validated. Operational governance had the most significant impact on service quality ($\beta = 0.917$) the highest coefficient in the model, aligning with Wahyuni & Cahyani (2025), who discovered that governance principles such as transparency and accountability directly shape service delivery processes. The direct effects of governance on operational performance ($\beta = 0.605$) and resilience ($\beta = 0.566$) were both significant, aligning with Syahrir DM (2023) and Lv et al., (2023), though with notably higher coefficients, likely indicating the highly regulated, service oriented characteristics of the Bank BUMN environment in contrast to manufacturing or infrastructure domains.

Service quality demonstrated smaller, though still significant, direct effects on performance ($\beta = 0.312$) and resilience ($\beta = 0.371$), consistent with Dewi (2024) and Aden & Muthimi (2022). The significant indirect effects (H6, H7) confirm that service quality partially mediates governance's impact on both outcomes, indicating that governance operates through two simultaneous pathways: a direct structural pathway and an indirect capability-based pathway via service quality. This pattern supports the RBV idea that resources (governance) generate superior outcomes both directly and by enhancing the capabilities (service quality) they enable (Barney, 1991; Grant, 1991).

DISCUSSION

The results of this research provide empirical support for all seven hypotheses, confirming that operational governance serves as a key factor influencing both operational performance and operational resilience, either directly or through the mediating capability of service quality.

The significant direct influence of operational governance on operational performance (H1: $\beta = 0.605$) supports the Resource-Based View proposition that structured planning, implementation, and evaluation processes directly lead to operational speed, accuracy, and productivity (Barney, 1991). This result aligns with Syahrir DM (2023), who reported a positive governance, performance relationship in manufacturing firms, although the coefficient obtained in this study is considerably higher, likely reflecting the more standardized and tightly regulated operating environment of Bank BUMN compared to manufacturing settings.

Similarly, governance's positive effect on operational resilience (H2: $\beta = 0.566$) aligns with Lv et al. (2023) and BCBS (2021) both highlighting as a foundation for systematic risk anticipation and recovery capacity. Notably, whereas Lv et al. (2023) discovered this relationship to operate primarily through mediating mechanisms (resource reconfiguration and organizational cognition), the present study finds a strong direct effect, suggesting that in the banking context, governance

may build resilience more immediately through continuous operational discipline rather than requiring additional intervening capabilities.

The effect of governance on service quality (H3: $\beta = 0.917$) was the most significant connection in the model, supporting the RBV perspective that service quality is a competency developed from governance as a key resource Grant (1991). This result mirrors Wahyuni & Cahyani (2025), who discovered that governance principles such as transparency, accountability, and responsiveness enable more structured and consistent service delivery. The remarkably elevated coefficient indicates that, within the strictly controlled Bank BUMN environment, service quality relies heavily on the foundational governance framework.

Service quality's direct effects on performance (H4: $\beta = 0.312$) and resilience (H5: $\beta = 0.371$) were both significant but comparatively modest, aligning with Dewi (2024) regarding performance and Aden & Muthimi (2022) concerning resilience. This pattern regards service quality as a genuine but secondary contributor relative to governance itself, supporting its theoretical function as a resultant capability instead of a principal resource.

Finally, the partial mediation results (H6, H7) indicate that service quality channels part of governance's influence on both performance and resilience, while a significant direct effect persists in both pathways. This dual-pathway model reflects Syahrir DM (2023), where competitiveness partially mediated governance's effect on performance, and Lv et al. (2023), where organizational capabilities mediated governance's impact on resilience, however in this research, the mediating capability specific to the banking context is service quality. The consistency of this mediation pattern across two distinct outcome variables (performance and resilience) indicates that service quality functions as a general capability connector in banking operations, rather than an outcome-specific mechanism.

Taken together, these results reinforce the RBV argument that a valuable, rare, and hard to imitate resource such as operational governance generates superior organizational outcomes both directly and through the capabilities it enables, with service quality serving as the key capability bridge in the Bank BUMN operational context.

CONCLUSION

This research provides empirical proof that operational governance positively influences both operational performance and operational resilience among Bank BUMN employees, both directly and indirectly through service quality. All seven hypotheses received support, bolstering the Resource-Based View assertion that governance acts as a strategic internal resource, with its value enhanced by the organizational capability of service quality, which serves as a partial mediator rather than a complete mediator in both paths.

These findings suggest that Bank BUMN management should prioritize strengthening core governance mechanisms, standard operating procedures, monitoring systems, and internal controls, as they are the main influence on operational results, while simultaneously investing in service quality capabilities (staff competence, service consistency, physical facilities) as a supportive, though secondary, pathway.

This research is constrained by its cross-sectional design, self-reported measures, and a sample size that is marginally less than the originally aimed target. Future research is recommended to utilize longitudinal approaches, incorporate objective performance indicators, and examine additional contextual moderators such as digital maturity or organizational culture to further clarify the boundary conditions of this model.

SUGGESTION FOR FUTURE RESEARCH

Building on the limitations identified in this research, several directions are proposed for upcoming research.

First, future research should aim to replicate this model within a more geographically homogeneous sample, given that data collection in this study expanded beyond the initially intended Purwokerto region due to access constraints. A focus on a specific region or single branch would provide a more transparent view of located operational governance dynamics.

Second, given the cross-sectional nature of this research, a longitudinal framework is recommended to understand how operational governance, service quality, performance, and resilience evolve over time, particularly following periods of operational disruption.

Third, future research may integrate objective performance and resilience indicators (e.g., incident recovery time, service downtime records) alongside self-reported perceptual data, to reduce potential common-method bias and strengthen the validity of findings.

Fourth, further contextual variables, such as digital maturity, organizational culture, or leadership style, could be examined as moderators to better explain boundary conditions under which governance and service quality most strongly influence operational outcomes.

Finally, applying this model to additional financial service entities, including private banks, insurance companies, or fintech companies, would aid in demonstrating the broader applicability of the governance, service quality, performance, and resilience framework beyond the context of Bank BUMN.

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