



The Influence of Employee Performance, Supply Chain Management and Service Quality on Operational Performance Power as a Service Regional Sumbagsel PT. XYZ

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ABSTRACT: This research aims to analyze the influence of Employee Performance, Supply Chain Management, and Service Quality on Operational Performance in the Power as a Service (PaaS) business at PT. XYZ Regional Sumbagsel. The research utilized a quantitative design involving survey data from 568 subjects including Site Engineers and Site Engineer Coordinators. Data analysis was performed utilizing the Partial Least Squares-Structural Equation Modeling (PLS-SEM) technique via SmartPLS 4. The empirical findings indicate that Employee Performance, Supply Chain Management, and Service Quality have a positive and significant effect on Operational Performance, both partially and simultaneously. The Service Quality variable has the most dominant influence on improving operational performance. The research model also showed good predictive ability with an R-Square value of 0.543 and Q-Square of 0.532. These findings indicate that the success of operational performance in the PaaS business is greatly influenced by the integration of human resource quality, supply chain effectiveness, and consistency of service quality in supporting the achievement of Service Level Agreements (SLAs). This research contributes to the development of operational management literature, especially on the telecommunications infrastructure industry which demands a high level of service reliability and minimal downtime.

KEYWORDS: Employee Performance, Supply Chain Management, Service Quality, Operational Performance, Power as a Service, PLS-SEM

JEL Classification: [L25, L96]

INTRODUCTION

In recent years, the business Power as a Service (PaaS) PT. XYZ shows quite rapid development. This growth is in line with the increasing energy demand for telecommunication tower sites that continue to grow in Indonesia (Deevela et al., 2024). The telecommunications industry is one of the sectors that has a high level of competition and very rapid technological development. Dynamic competition encourages every company to provide more reliable, efficient, and sustainable services to meet customer needs (Meena & Gang, 2022).

Service Power as a Service (PaaS) is a strategic solution for telecommunications operators because it provides integrated electrical infrastructure without requiring large investments. PT. XYZ provides power supply services, digital monitoring systems, and based operations and maintenance Service Level Agreement (SLA). The need for this service continues to increase as the telecommunications industry grows and the national internet penetration is projected to reach 240 million users by 2025 (Kharisma, 2022). Currently, PT. XYZ manages more than 39,000 telecommunication towers in Indonesia with Tenant of various national mobile operators. These conditions show that the sustainability of telecommunication services is highly dependent on the stability in energy supply and the effectiveness of supporting infrastructure management.

Especially in the Southern Sumatra region (South Sumatra), PT. XYZ manages telecommunication infrastructure in five provinces, namely Lampung, South Sumatra, Bengkulu, Bangka Belitung, and Jambi. However, the electricity system in the region still faces electricity supply instability due to limited power reserves. Based on data from the South Sumatra electricity system, the power reserve (Lap Reserve) is only about 598.4 MW so it is vulnerable to sudden power outages and outages when there is a surge in load or power outages (Kurniawan, 2025). This condition causes a high-risk Downtime on Site telecommunications that have a direct impact on the quality of mobile operators' services.

Instability in electricity supply has an impact on telecommunication tower operations because it can disrupt services, reduce operational productivity, and potentially damage sensitive electronic devices (Sugiat et al., 2024). These backups are below safety standards so they are vulnerable to sudden power outages and interruptions (Kurniawan, 2025). To overcome this condition, PT. XYZ develops services Power as a Service (PaaS) in the form of Real-Time Monitoring electrical device and battery capacity accompanied by device maintenance service on the side Ground Site to maintain the stability of telecommunication services. The execution of this initiative is anticipated to enhance system dependability of the electrical system while minimizing the potential for operational disruptions in Site telecommunications. The development of the performance of PT. XYZ during 2025 can be displayed in Figure 1 below.



Figure 1. PaaS SLA Performance in 2025

Source: Internal Data of PT. XYZ (2025)

Based on internal data from PT. XYZ in 2025, the performance of PaaS services in the South Sumatra region in the January-June 2025 period has not met the company's SLA target of 92.5%, with an average achievement of only 85.69%. Although in the July-December 2025 period the performance increased to 93.67%, this achievement still fluctuated so that it showed that service stability was not optimal, especially in the aspect of Reliability and Responsiveness (Cronin & Taylor, 1992).

The results of the operational evaluation show that the low performance SLA due to the unavailability of Vendor Service Modules PaaS, limited material and battery providers, and low technical competence of partners Maintenance (Prajogo et al., 2012). This condition causes the device repair process to take longer, limited component stock, and less optimal process Troubleshooting in the field (Bilal et al., 2024). To overcome this, PT. XYZ makes improvements through module repair cooperation, strengthening the material supply chain, and refreshment training for Engineer. This measure has demonstrated its capacity to optimize organizational productivity, speed up the handling of disruptions, and increase achievement SLA company.

This phenomenon demonstrate that the performance of PaaS services is affected by employee performance, Supply Chain Management, and Service Quality. Human resource performance plays a role in operational effectiveness, while supply chain management determines the availability of key components such as Rectify, batteries, and monitoring devices. In contrast, service quality functions as a benchmark of organizational efficacy in preserving accomplishments (Piwowar-Sulej, 2020) Service Level Agreement (SLA) (Meena & Gang, 2022).

Research Pham et al. (2024) shows that organizational culture or employee performance have a positive effect on the quality of service-based company services. Aydemir & Kıpçak (2024) further clarify that Internal Service Quality exerts a substantial impact on enhancing worker output, particularly within the dimensions of Responsiveness and Assurance. In addition, Tiwong et al. (2024) states that SLA compliance and supplier collaboration are key factors in improving supply chain efficiency. Research Nadeem et al. (2023) also explained that proactive SLA management is able to increase operational efficiency and reduce SLA violation rates. Although a lot of research has been conducted on employee performance, supply chain management, and service quality, studies on Power as a Service (PaaS)-based telecommunication infrastructure services are still relatively limited, especially in the context of Business-to-Business (B2B). In addition, this study uses an employee-perceived service quality approach to assess service quality from the company's internal perspective.



Based on these conditions, this research aims to analyze the influence of employee performance, supply chain management, and service quality on the operational performance of PT. XYZ Regional Sumbagsel, both partially and simultaneously. This study is anticipated to offer a comprehensive overview of the most influential factors in improving service performance and achieving the company's Service Level Agreement (SLA). Furthermore, the empirical outcomes are anticipated to be the basis for the preparation of strategies to increase operational effectiveness, strengthen service quality, and make more appropriate managerial decisions to increase the business competitiveness of Power as a Service PT. XYZ.

LITERATURE REVIEW

Service-Profit Chain Theory

Theory Service-Profit Chain presented by Heskett, Sasser, and Schlesinger explained that service quality is influenced by the company's internal quality, employee performance, and operational effectiveness which substantially influences organizational performance (Heskett et al., 1994). In this study, the theory was used to explain the relationship on employee performance, Supply Chain Management, Service Quality, and operational performance in the PaaS business of PT. XYZ. This framework was selected since it can delineate the methodical link regarding the firm's inherent productivity and service quality and achievement Service Level Agreement (SLA), so that it is considered the most relevant as the foundation of research theory.

Employee Performance

Employee Performance is an important factor in supporting organizational effectiveness, especially in service companies such as PT. XYZ that is oriented towards service quality and achievement Service Level Agreement (SLA). Campbell explained that performance is influenced by work knowledge, technical ability, and individual motivation in carrying out tasks (Campbell et al., 1990). This study adopts the employee performance from Pham et al. (2024), namely work quality, ability to retain customers, employee commitment, and Attitude. Work quality related to job accuracy (Piwowar-Sulej, 2020), ability to retain customers related to the ability to maintain customer satisfaction (Solnet & Golubovskaya, 2023), employee commitment Regarding employee loyalty (Loor-Zambrano et al., 2022), while Attitude related to professionalism in service (Budur & Poturak, 2021).

Supply Chain Management

Supply Chain Management (SCM) entails supervising the movement of resources, data, and provisions from providers to consumers seamlessly (Mentzer et al., 2008). In the PaaS business of PT. XYZ, SCM plays a critical role on maintaining device availability or service continuity to support achievement Service Level Agreement (SLA). This research refers to the theory Supply Chain Operations Reference (SCOR), Transaction Cost Economics, and Relational View which emphasizes the importance of supplier management, contracts, and vendor collaboration (Dyer & Singh, 1998). SCM dimensions include Supplier Performance & Reliability, Communication & Responsiveness, Contract & Compliance, Collaboration & Partnership, and Risk & Continuity Management related to supplier quality, communication, contract compliance, cooperation, and supply risk mitigation (Dyer & Singh, 1998; Kırılmaz & Erol, 2017; Monczka et al., 1998).

Service Quality

Service excellence represents an evaluation contrasting the provided service standard against consumer anticipation (Parasuraman et al., 1988). Within this research, quantifying service quality adopts the SERVPERF framework by Cronin & Taylor (1992) evaluating the execution solely through the lens of observed actual outcomes. This model was chosen because it is effective for measuring the quality of service-based Service Level Agreement (SLA). The dimensions used include tangible, reliability, responsiveness, assurance, and Empathy relating to facilities, consistency of service, speed of response, professionalism, and attention to customers (Cronin & Taylor, 1992; Parasuraman et al., 1988). In the PaaS business of PT. XYZ, service quality is measured based on employees' internal perceptions because they better understand technical standards and service reliability. Prior studies indicate that superior service quality enhances operational efficiency and company performance (Alshurideh et al., 2022; Yum & Yoo, 2023).

Operational Performance

Operational performance represents the organizational capacity to execute business activities with high effectiveness and efficiently to achieve service standards (Heizer et al., 2017). (Heizer et al., 2016; Slack & Brandon-Jones, 2019). In the PaaS business, operational performance is measured through the ability to maintain service quality and achievement Service Level Agreement



(SLA) (Tiwong et al., 2024). This research uses the flexibility, delivery, quality, and Cost (Masa'deh et al., 2022). In addition, SLA is a key indicator because it reflects response time, Mean Time to Repair (MTTR), and Availability System (Buyya et al., 2009). At PT. XYZ, SLA achievement is important because service interruptions can lead to Downtime BTS and penalties from mobile operators.

The Effect of Employee Performance on Operational Performance

Employee performance is vital in maintaining the seamless execution of various PaaS services. Theory Individual Job Performance explains that performance is influenced by individual abilities, skills, and motivation in carrying out work (Campbell et al., 1990). Research Adawiyah et al. (2025) and Kurniawan et al. (2022) demonstrate that employee performance has a significant effect on operational performance Because competent employees are able to improve work efficiency, service quality, and speed of job completion. In addition, good employee performance can strengthen the Reliability, Responsiveness, and Insurance in services so as to support the achievement on the company's SLA.

H1: Employee Performance has a positive effect on Operational Performance.

The Influence of Supply Chain Management on Operational Performance

Supply Chain Management (SCM) plays a critical function in sustaining the seamless distribution of resources, technical devices, and operational support so that services continue to run according to SLAs. Theory Supplier Performance and Relational View explains that the effectiveness of relationships with suppliers can improve the company's operational efficiency (Dyer & Singh, 1998). Research Duong et al. (2023) and Yoga et al. (2022) demonstrate that SCM practices have a significant effect on improving operational performance. In the PaaS business of PT. XYZ, the effectiveness of SCM determines battery availability, Rectify, as well as the speed of vendor response when there is a BTS disruption, so that the better the SCM management, the higher the company's operational performance.

H2: Supply Chain Management has a positive effect on Operational Performance.

The Effect of Service Quality on Operational Performance

Service quality is an important factor in elevating corporate operational productivity. Utilizing the SERVPERF framework, service standard is evaluated via the dimensions tangible, reliability, responsiveness, assurance, and empathy (Cronin & Taylor, 1992). Research shows that good service quality can improve operational efficiency, reduce service interruptions, and speed up the handling of operational problems (Alkaf et al., 2021; Singh et al., 2023). In PaaS services, the quality of service is reflected on the company's ability to maintain Uptime BTS, speed of fault repair, and SLA achievement. Therefore, the superior the quality of services provided, corporate operational performance inherently accelerates.

H3: Service Quality has a positive effect on Operational Performance.

The Influence of Employee Performance, Supply Chain Management, and Service Quality on Operational Performance

Employee performance, Supply Chain Management, and Service Quality Together, it affects the improvement of the company's operational performance. Previous research has shown that simultaneous testing of variables delivers a more holistic overview of elements affecting institutional operational performance (Abusaq, 2023; Gimeno-Arias et al., 2021; Rita et al., 2019). In the PaaS business of PT. XYZ, good employee performance, effective supply chain support, and optimal service quality will support the achievement of SLAs and improve the company's operational efficiency.

H4: Employee Performance, Supply Chain Management, and Service Quality simultaneously have a positive effect on Operational Performance.

METHODS

Types and Approaches to Research

This research is a causal research (Explanatory Research) which aims to analyze the influence of Employee Performance, Supply Chain Management, and Service Quality against Operational Performance based Service Level Agreement (SLA) on the service Power as a Service (PaaS) PT. XYZ Regional Sumbagsel (Cooper & Schindler, 2014). The research employs a positivistic paradigm with a quantitative approach through a survey method using a questionnaire (Sekaran & Bougie, 2016). The research analysis unit is a technician and PaaS operational supervisor of PT. XYZ Regional Sumbagsel. The research was conducted by design Cross-sectional because data collection is carried out in one specific period (Saunders et al., 2015).



Operational Research Variables

This study uses four variables, namely Employee Performance (X_1), Supply Chain Management (X_2), Service Quality (X_3), and Operational Performance (Y). Employee Performance measured by dimensions Work Quality, employee commitment, ability to retain customers, and Attitude (Heskett et al., 1994; Pham et al., 2024). Supply Chain Management measured through Supplier Performance & Reliability, Responsiveness & Communication, Contract & Compliance, Collaboration & Partnership, and Risk Management (Dyer & Singh, 1998; Monczka et al., 1998). Service Quality Using Dimensions Tangible, Reliability, Responsiveness, Insurance, and Empathy (Cronin & Taylor, 1992; Parasuraman et al., 1988), while Operational Performance measured through flexibility, Delivery, Quality, and Cost (Masa'deh et al., 2022). All indicators were measured utilized a Likert scale of 1–5.

Population and Sample

The research population consists of 284 sites Power as a Service (PaaS) PT. XYZ Regional Sumbagsel which is spread across the South Sumatra, Lampung, Bengkulu, and Bangka Belitung regions. This inquiry employs a census approach, thereby utilizing the complete population as the research object (Lavrakas, 2008). Each site is represented by two respondents, namely Site Engineer Coordinator and Site Engineer, so that the total number of respondents was 568 people. Respondents were selected based on the criteria of having worked for at least six months, being directly involved in PaaS operations, and understanding the company's SLA fulfillment process.

Data Collection and Data Sources

Data collection was executed via online questionnaires distribution employing a 1–5 interval Likert scale. The research used primary and secondary data. Primary data was obtained from the company's internal respondents' answers, while secondary data came from internal reports of PT. XYZ, SLA achievement data, and relevant previous literature and research (Lavrakas, 2008).

Data Analysis Techniques

Data analysis was performed utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4. The PLS-SEM technique was selected since it can examine the intricate associations among latent variables and is appropriate for predictive frameworks and investigation-based research centered on theory development (Hair et al., 2021). Model evaluation is carried out through testing Outer model and Inner model. Testing Outer model Includes convergent validity, Discriminant validity, and Internal Consistency Reliability using the Outer Loading, Average Variance Extracted (AVE), Composite Reliability, Cronbach's Alpha, and Heterotrait-Monotrait Ratio (HTMT). Meanwhile, testing Inner model done using the R-Square, Q-Square, Path Coefficient, as well as techniques bootstrapping to test the significance of the research hypothesis.

RESULTS

Evaluation of Measurement Models (Outer Model)

Before testing the hypothesis on Inner model, an evaluation was carried out Outer model to ensure that the indicator is valid and reliable in representing latent variables. On the approach Partial Least Square-Structural Equation Modelling (PLS-SEM), the evaluation is carried out through testing Reliability indicator, convergent validity, Internal Consistency, and Discriminant validity using the Outer Loading, Average Variance Extracted (AVE), Cronbach's Alpha, Composite Reliability, and Heterotrait-Monotrait Ratio (HTMT) (Hair et al., 2022).

Internal Reliability & Convergent Validity

Internal reliability and convergent validity testing is performed to guarantee that every indicator can represent the research construct consistently and validly. This assessment was executed utilizing outer loading and AVE values. The indicator was declared reliable if it had an outer loading value of > 0.70 , while convergent validity was met if the AVE value was > 0.50 . The test outcomes are displayed in Table 1.



Table 1. Results of Internal Reliability and Convergent Validity Evaluation

Variable	Dimensions	Outer Loading Range	High Order Loading	AVE Dimensions	AVE Variable	Remarks
Employee Performance	Work Quality, Ability to Retain Customer, Employee Commitment, Attitude	0,739–0,818	0,852–0,892	0,792–0,829	0,625	Valid
Supply Chain Management	Supplier Performance & Reliability, Responsiveness & Communication, Contract & Compliance, Collaboration & Partnership, Risk & Issue Handling	0,705–0,783	0,817–0,909	0,737–0,796	0,651	Valid
Service Quality	Tangible, Empathy, Reliability, Responsiveness, Assurance	0,701–0,830	0,827–0,893	0,747–0,812	0,601	Valid
Operational Performance	Flexibility, Delivery, Quality, Cost	0,756–0,857	0,851–0,883	0,844–0,881	0,550	Valid

Referring on the results in Table 1, all indicators have an outer loading value above 0.70 so that they meet the indicator reliability criteria. The lowest value is found in the RES1 indicator of 0.701, while the highest value is found in the QUAL3 indicator of 0.857. In addition, all dimensions also show a strong high order loading value in the range of 0.817–0.909. The outcome of the convergent validity test showed that all variables had an AVE value above 0.50, namely Employee Performance of 0.625; Supply Chain Management by 0.651; Service Quality of 0.601; and Operational Performance of 0.550. Thus, all indicators and dimensions are declared valid and reliable so that the research model is feasible to continue at the next stage of evaluation.

Internal Consistency

Internal consistency testing is carried out to measure the level of consistency of indicators in representing latent variables. This evaluation was performed utilizing Cronbach's Alpha and Composite Reliability metrics, requiring thresholds exceeding 0.70. The outcomes of the internal consistency test are displayed in Table 2.

Table 2. Internal Consistency Evaluation Results

Variable	Cronbach's Alpha	Composite Reliability
Employee Performance	0,945	0,952
Supply Chain Management	0,951	0,957
Service Quality	0,952	0,957
Operational Performance	0,941	0,948

Based on the results in Table 2, all variables have Cronbach's Alpha and Composite Reliability values above 0.90, indicating a very high level of reliability. The highest score was found in the Service Quality variable with Cronbach's Alpha of 0.952 and Composite Reliability of 0.957. These outcomes demonstrate that all indicators possess superb internal consistency and can evaluate research constructs stably and reliably, thereby ensuring the research model remains appropriate to proceed toward the discriminant validity testing stage.

Discriminant Validity

Discriminant validity testing is executed to guarantee that every construct within the design possesses distinct variations. This assessment utilizes the Heterotrait-Monotrait Ratio (HTMT) technique which is deemed more robust than the Fornell-Larcker method and cross-loading for uncovering discriminant validity (Hair Jr. et al., 2022). The model is declared to meet discriminant validity if the HTMT value between constructs is below 0.90.

First Order



Discriminant validity testing at the first-order level is performed to ensure that each dimension in the research variables is completely empirically different from each other. The outcomes of HTMT evaluation at this stage are displayed in Table 3.

Table 3. HTMT First Order Evaluation Results

	WQ	AR C	EC	AN D	SP R	RC	CC	RI H	TA N	EM P	RE	RE S	AS R	FL X	DL V	QU AL	CO ST	C P
WQ	-																	
AR C	0.757	-																
EC	0.778	0.810	-															
AN D	0.743	0.798	0.814	-														
SPR	0.328	0.358	0.283	0.311	-													
RC	0.285	0.340	0.249	0.307	0.850	-												
CC	0.297	0.301	0.323	0.378	0.715	0.734	-											
RIH	0.272	0.268	0.245	0.288	0.797	0.726	0.708	-										
TAN	0.367	0.297	0.415	0.392	0.278	0.250	0.322	0.244	-									
EMP	0.249	0.214	0.305	0.272	0.320	0.247	0.295	0.304	0.880	-								
RE	0.317	0.217	0.341	0.273	0.342	0.271	0.370	0.326	0.870	0.869	-							
RES	0.181	0.183	0.263	0.217	0.291	0.283	0.392	0.327	0.823	0.793	0.767	-						
ASR	0.296	0.266	0.351	0.334	0.421	0.319	0.395	0.404	0.847	0.809	0.767	0.702	-					
FLX	0.376	0.414	0.436	0.459	0.395	0.363	0.406	0.419	0.551	0.527	0.575	0.537	0.509	-				
DLV	0.422	0.423	0.466	0.416	0.454	0.446	0.444	0.466	0.502	0.474	0.477	0.428	0.474	0.741	-			
QUAL	0.343	0.388	0.437	0.387	0.482	0.443	0.447	0.521	0.542	0.533	0.522	0.532	0.508	0.694	0.717	-		
COST	0.399	0.455	0.463	0.435	0.509	0.494	0.467	0.485	0.565	0.538	0.557	0.522	0.538	0.753	0.743	0.744	-	
CP	0.259	0.264	0.280	0.303	0.808	0.771	0.752	0.750	0.303	0.364	0.327	0.334	0.381	0.373	0.415	0.499	0.449	-

Based on the results in Table 3, all HTMT values between dimensions are below the threshold of 0.90. The highest score was found in the relationship between the Tangible (TAN) and Empathy (EMP) dimensions of 0.880, while the lowest value was found in the relationship between Work Quality (WQ) and Responsiveness (RES) of 0.181. These results show that all dimensions have unique



characteristics and no construction overlap occurs. Thus, every dimension is confirmed to satisfy the discriminant validity requirements at the first-order level.

Second Order

After all constructs at the first-order level are declared to meet the criteria for discriminant validity, testing is continued at the second-order level. This test aims to ensure that the main latent variables in the research model also have clear differences and do not overlap each other conceptually or empirically. The results of HTMT testing at the second order level are displayed in Table 4 below.

Table 4. HTMT Second Order Evaluation Results

	Employee Performance	Supply Management	Chain	Service Quality	Operational Performance
Employee Performance	-				
Supply Management	Chain 0.385	-			
Service Quality	0.360	0.413	-		
Operational Performance	0.554	0.600	0.675	-	

Referring on the results in Table 4, all HTMT values between the main latent variables are below the critical limit of 0.90. The highest score was found in the relationship between Service Quality and Operational Performance at 0.675, whereas the minimum estimation occurred between Service Quality and Employee Performance at 0.360. Such discoveries validate that every latent construct inside this framework remains distinct, autonomous, and lacks multicollinearity.

With the fulfilment of all discriminant validity criteria at the first order and second order levels, one can conclude that the measurement model within this investigation has achieved comprehensive discriminant validity. This establishes a robust foundation for advancing to the subsequent analytical phase, specifically structural model evaluation (inner model) and hypothesis testing.

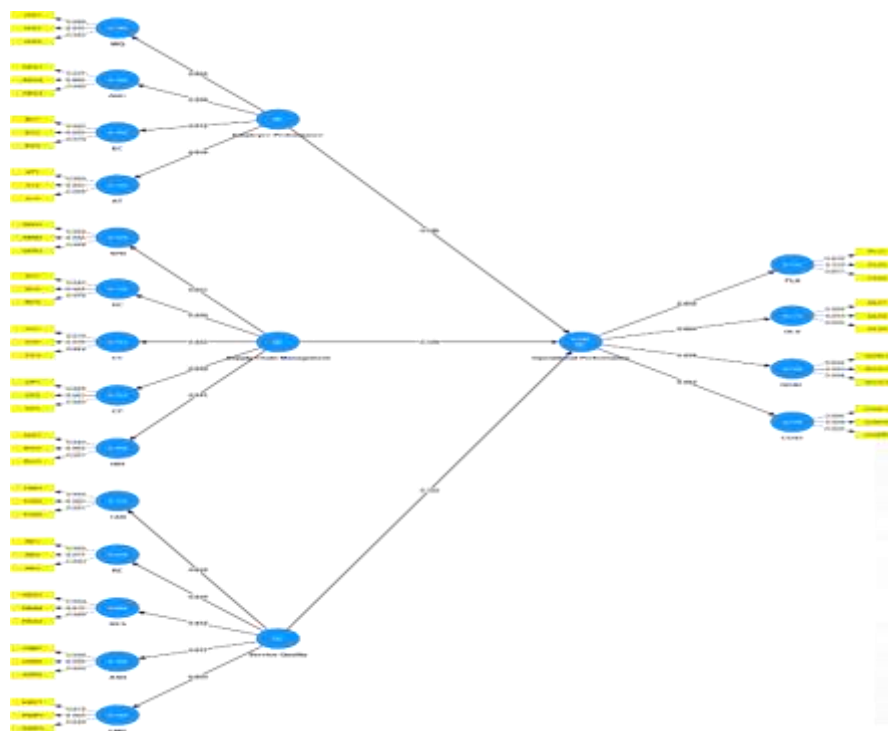


Figure 1. Research Model



Structural Model Test (Inner Model)

Once the outer model evaluation satisfies the validity and reliability benchmarks, the subsequent phase entails assessing the inner model within the PLS-SEM framework. This diagnostic aims to analyze the predictive power of the framework alongside the significance of paths between latent constructs, including the ability of exogenous factors to explain the total variance of endogenous variables in the structural model.

Coefficient of Determination (R-Square)

The coefficient of determination (R-Square) is utilized to assess the framework's capability to explain endogenous construct variance through exogenous variables in this investigation. The R-Square figure spans from 0 to 1, where an increased value denotes superior model predictive power. The outcomes of the R-Square analysis are displayed in Table 4.6.

Table 5. R-Square Evaluation Results

Variable	R-square	R-square adjusted
Operational Performance	0,543	0,538

Referring on Table 5, the R-square value of the Operational Performance variable is 0.543 with the adjusted R-square is 0.538. These results show that the variables Employee Performance, Supply Chain Management, and Service Quality are able to explain the variance in Operational Performance by 54.3%, while the remaining 45.7% are influenced by other variables outside the research model. The adjusted value of the R-square, which is not much different from the R-square, indicates that the model has good stability without any indication of overfitting. In general, structural models have predictive capabilities from moderate to strong category in explaining the Operational Performance of Power as a Service (PaaS) service at PT. XYZ Regional Sumbagsel.

Predictive Relevance Model (Q-Square)

In addition to R-Square, the evaluation of the model's predictive capabilities is also carried out through Predictive Relevance using the Q-Square value ($Q^2_{predict}$). This evaluation intends to determine the predictive relevance of the model toward empirical data, where a $Q^2 > 0$ score signifies that the framework possesses superior predictive capacity. The Q-Square outcomes are displayed in Table 6 below.

Table 6. Q-Square Evaluation Results

Variable	$Q^2_{predict}$	RMSE	MAE
Operational Performance	0,532	0,692	0,545

Referring on Table 6, the Q-square value of the Operational Performance variable is 0.532 which set that the model has strong predictive relevance because it is above the threshold of 0. These outcomes demonstrate that the model effectively represents the gathered data as well as predict new data well. In addition, the RMSE value of 0.692 and MAE of 0.545 indicate a relatively low level of prediction error, so that the model has good predictive accuracy in explaining the Operational Performance of Power as a Service (PaaS) service at PT. XYZ Regional Sumbagsel.

Hypothesis Test Results

Path Coefficients

Hypothesis testing in this research was performed via path coefficient analysis employing the bootstrapping method. These analytical outcomes were utilized to establish the orientation, dimension, and significance of impacts among variables inside the structural model. The results of the path coefficients test are displayed in Table 7 below.

Table 7. Path Coefficients

Hypothesis	Relationships	Original Sample (O)	Sample Mean (M)	STDEV	T Statistics	P Values	Remarks
H1	EP → ON	0,259	0,259	0,045	5,704	0,000	Accepted
H2	SCM → ON	0,294	0,295	0,042	6,919	0,000	Accepted
H3	SQ → ON	0,417	0,417	0,041	10,160	0,000	Accepted



Referring on the results in Table 7, all relationships between independent variables and dependent variables show a positive and significant influence.

First, the relationship between Employee Performance (EP) and Operational Performance (OP) showed a positive and significant influence with a coefficient value of 0.259, t-statistics of 5.704, and p-value of 0.000. These outcomes met the significance criteria ($t > 1.96$ and $p < 0.05$), so H1 was declared accepted. These findings indicate that improving employee performance will have an impact on improving operational performance in PaaS service at PT. XYZ Regional Sumbagsel.

Second, the connection between Supply Chain Management (SCM) and Operational Performance (OP) similarly demonstrated a positive, significant impact, yielding a path coefficient of 0.294, t-statistic of 6.919, and p-value of 0.000. These outcomes show that the more effective the supply chain management, the better the operational performance will be.

Third, the relationship between Service Quality (SQ) and Operational Performance (OP) has the strongest influence compared to other variables, with a coefficient of 0.417, t-statistics of 10.160, and p-value of 0.000. This demonstrate that improving service quality has a dominant contribution in improving the company's operational performance.

Simultaneous Test Results

Simultaneous testing was carried out to determine the co-effect of independent variables on dependent variables using the F test (ANOVA). The test results are displayed in Table 8 below.

Table 8. F Test Results (ANOVA)

Source	Sum of Square	df	Mean Square	F	P Value
Regression	153,908	3	51,303	110,420	0,000
Error	130,092	280	0,465	-	-
Total	284,000	283	-	-	-

Referring on Table 8, an F-statistics value of 110.420 with a p-value of 0.000 was obtained. Since the p-value remains below 0.05, every independent variable concurrently exerts a significant impact on the dependent constructs. Such findings indicate that Operational Performance emerges from the combined synergy of Employee Performance, Supply Chain Management, along with consistent Service Quality. Thus, improving the operational performance of PaaS services at PT. The XYZ Regional of South Sumatra is influenced by the integration of these three factors together.

DISCUSSION

The Effect of Employee Performance on Operational Performance

The findings of the research show that Employee Performance has a positive effect on Operational Performance. These findings indicate that improving employee capabilities, accuracy, and responsiveness plays an important role in supporting the smooth operation of companies, especially in PaaS services that demand speed of handling disruptions and meeting Service Level Agreements (SLAs). In infrastructure service-based operations, employee performance is not only related to the completion of individual tasks but also determines the stability of services and the effectiveness of the overall operational process. The better the performance of technicians in monitoring, repairing, and coordinating the field, the higher the company's ability to maintain service continuity and minimize potential downtime.

Theoretically, these findings are in line with Service-Profit Chain submitted by Heskett et al. (1994), which explains that the quality of external services is affected by the quality of internal services, including the effectiveness of employee performance. In addition, Individual Job Performance Theory developed by Campbell et al. (1990) It also emphasizes that individual abilities, motivation, and skills are the main factors in producing optimal work performance. These findings are supported by research Adawiyah et al. (2025), Hatmanto et al. (2022), and Abdullah et al. (2021) which shows that high employee performance is able to improve the operational efficiency and quality of the company's service output

The Influence of Supply Chain Management on Operational Performance

The findings of the research show that Supply Chain Management has a positive effect on Operational Performance. These findings show that the effectiveness of supply chain management has an important role in maintaining the smooth running of the company's



operational processes. In PaaS services, operational success relies heavily on device availability, speed of material distribution, and good coordination with vendors and suppliers. When supply chain processes run in an integrated manner, companies can reduce delays in handling outages, speed up the service recovery process, and maintain consistent Service Level Agreement (SLA) compliance. Conversely, disruptions within the supply chain possess the capability to induce operational constraints that exert a direct impact on the degradation of corporate service standards.

Theoretically, these findings reinforce the concept Service-Profit Chain which confirms that operational success is not only determined by human resources, but also by the company's internal support systems, including Supply Chain Management. In this context, the supply chain functions as the main support for operational sustainability through material availability and effective distribution coordination. These findings are also supported by research Truong et al. (2017), Obiri-Yeboah et al. (2025), Yoga et al. (2022), and Liu & Jiang (2025) demonstrating that integrated Supply Chain Management enhances corporate efficiency and operational performance. Consequently, strategic supply chain management constitutes a critical determinant for preserving operational stability across sectors requiring exceptional service reliability and minimized downtime.

The Effect of Service Quality on Operational Performance

The findings of the research demonstrate that Service Quality has a positive effect on Operational Performance. These findings indicate that consistent service quality is an important factor in maintaining the effectiveness of the company's operations, especially in Power as a Service (PaaS) services that demand system reliability and continuous service level agreement (SLA) fulfillment. In the operational context of infrastructure services, service quality is not only related to customer satisfaction but also reflects the company's ability to maintain system stability, speed of response to handling disruptions, and the accuracy of operational processes. The superior the service quality standards implemented by the firm, the greater the corporate capacity to mitigate operational disruptions and sustain service continuity.

Theoretically, these findings reinforce the concept Service-Profit Chain which explains that service quality is the link between the company's internal capabilities and the achievement of operational performance. Regarding PaaS services, evaluating Service Quality is more appropriate when conducted from the firm's internal perspective because technical personnel possess a deeper understanding of SLA compliance parameters, system reliability, and quality of service execution before the final results are perceived by the customer. These outcome are also supported by research Fahreza et al. (2025), Alkaf et al. (2021), and Singh et al. (2023) which states that improving service quality is able to increase the efficiency and effectiveness on the company's operations. In addition, Munene et al. (2017) confirms that the Tangible is an important factor on supporting the smooth operation of technical companies. Thus, the company's ability to maintain service quality reflects the company's ability to manage operations in an adaptive, responsive, and service-oriented manner.

The Influence of Employee Performance, Supply Chain Management, and Service Quality on Operational Performance

The results of the research show that Employee Performance, Supply Chain Management, and Service Quality simultaneously affect Operational Performance. These findings show that the achievement of operational performance cannot be determined by one factor alone, but is established through coordinating proficient human resource capabilities, dependable supply networks, along with stable, high-quality corporate services. In the context of PaaS services, operational success is highly dependent in the ability of technicians to handle disruptions, smooth distribution of devices and materials, and service quality that is able to maintain system stability and compliance with Service Level Agreements (SLAs). The integration of these three factors allows companies to run operational processes more effectively, responsively, and with minimal downtime.

Theoretically, these findings reinforce the concept Service-Profit Chain which emphasizes the importance of integrating various internal elements of the company in creating optimal operational performance. Good technician performance requires smooth supply chain support so that the operational process does not experience obstacles, while service quality plays a role on maintaining the consistency of the company's operational implementation. These findings are also supported by research Abusaq (2023), Gimeno-Arias et al. (2021), and Rita et al. (2019) which explains that simultaneous analysis provides a more comprehensive picture of organizational performance than partial analysis. In addition, Adawiyah et al. (2025), Munene et al. (2017), and Yoga et al. (2022) demonstrate that integrating Employee Performance, Supply Chain Management, and Service Quality constitutes a crucial determinant for optimizing the efficiency and effectiveness of corporate operations.



This research makes a theoretical contribution to the development of operations management studies, especially related to internal factors that affect Operational Performance in Power as a Service (PaaS)-based digital infrastructure services. The empirical findings demonstrate that Employee Performance, Supply Chain Management, and Service Quality exert a significant positive effect on Operational Performance. These findings strengthen the Service-Profit Chain theory which explains that the company's operational success is influenced by the synergy of internal service quality, employee performance, and the reliability of the company's operational system.

In addition, this research expands the application of Service-Profit Chain in the context of Business-to-Business (B2B), especially the telecommunications industry. This research proves that the integration of technician capabilities, smooth supply chain, and internal service quality has a direct effect on operational effectiveness, especially in fulfilling Service Level Agreements (SLAs). Thus, this study enriches the operational management literature in industries that demand high service reliability and zero downtime.

CONCLUSION

Based on the findings of the research, Employee Performance, Supply Chain Management, and Service Quality are proven to have a positive and significant effect on Operational Performance in Power as a Service (PaaS) services at PT XYZ Regional Sumbagsel. These findings show that the achievement of operational performance is influenced by the quality of employee performance, the effectiveness of supply chain management, and the consistency of the quality of the company's internal services in supporting the fulfilment of Service Level Agreements (SLAs) and maintaining service stability. The better the integration of these three aspects, the higher the company's ability to carry out operations effectively, responsively, and with minimal downtime.

Referring on these findings, companies are advised to strengthen the integration between Employee Performance, Supply Chain Management, and Service Quality through optimizing material procurement, supervising the implementation of Standard Operating Procedures (SOP), and utilizing the Network Management System (NMS) so that the operational process runs faster and more precisely. In addition, companies also need to build an operational system that integrates network monitoring, material availability, and distribution of technician work to increase the effectiveness of fulfilling Service Level Agreements (SLAs) and maintain the stability of company services in a sustainable manner.

LIMITATION

Given the limitations of this study, further research is recommended additional variables capable of influencing Operational Performance, including leadership, organizational culture, or the adoption of digital technology. In addition, Service Quality measurement can be developed by combining the internal perspectives of the company and customers to obtain a more comprehensive picture. Further research is also expected to expand the scope of observations in other regions or telecommunication companies to test the consistency and generalization of the research model that has been built.

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