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# Planning, Organizing, Actuating, and Controlling as Predictors of Hospital Service Effectiveness: A Study in Aceh Province, Indonesia

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**Abstract**

Hospital service effectiveness is an important indicator of health service performance because it reflects the ability of hospitals to achieve service goals, support staff competence, and maintain work behavior that contributes to service quality. However, hospital services still face managerial challenges related to planning, coordination, service implementation, and quality control. This study aimed to analyze planning, organizing, actuating, and controlling as predictors of hospital service effectiveness at Ibnu Sina Hospital Aceh Besar, Indonesia. This study used a quantitative explanatory design with a cross-sectional approach. The study population consisted of 177 hospital employees involved in management and service delivery, including health and non-health workers. A total sampling technique was applied, and 123 complete responses were analyzed. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the measurement model and structural relationships among variables. The structural model showed that planning, organizing, actuating, and controlling simultaneously explained 54.7% of the variance in hospital service effectiveness. All four management functions had positive and significant effects on service effectiveness. Actuating was the strongest predictor, followed by controlling, organizing, and planning. These findings indicate that hospital service effectiveness is strongly influenced by the quality of service implementation and quality control mechanisms, while planning and organizing remain important foundations. Strengthening staff compliance with standard operating procedures, improving inter-unit communication, conducting routine monitoring, and implementing corrective actions are essential strategies to improve hospital service effectiveness.



## 1. Introduction

Hospitals are health service organizations that play a strategic role in improving community health status. As health care institutions, hospitals are expected to provide services that are effective, efficient, responsive, safe, and consistent with established service standards [1, 2]. High-quality health systems are essential for improving health outcomes, strengthening public trust, and ensuring that health services meet the needs of the population [1, 3]. Service effectiveness is therefore an important indicator of hospital performance, as it reflects not only the achievement of organizational goals but also the managerial processes that support continuous improvement in service quality [3–5].

In hospital service delivery, effectiveness is closely related to the implementation of service management functions.

Service management determines how hospital resources are planned, organized, implemented, and controlled to achieve service goals optimally. The selection of planning, organizing, actuating, and controlling (POAC) as the main variables in this study is based on the classical management theory proposed by George R. Terry [6], which explains management as a systematic process consisting of planning, organizing, actuating, and controlling to achieve organizational goals through the effective use of human and other resources [7, 8]. Therefore, the POAC framework provides a relevant theoretical foundation for examining how managerial functions contribute to hospital service effectiveness [9].

Ofei et al. [10] stated that healthcare managers require managerial competencies to support effective, efficient, and responsive healthcare systems. These competencies include the ability to coordinate resources, manage staff, and ensure that service activities are aligned with organizational goals. Similarly, Kakemam et al. [11] emphasized that competent hospital managers are essential for improving productivity, service quality, and the sustainability of healthcare organizations. Inadequate planning may lead to unclear service targets, weak organizing may result in overlapping responsibilities and poor inter-unit coordination, inconsistent actuating may reduce compliance with service standards, and ineffective controlling may hinder continuous performance improvement [3, 12–14]. Previous studies have also shown that management functions such as planning, organizing, actuating, and controlling are essential for achieving desired service outcomes and improving staff performance in hospital settings [5, 11, 15].

Previous studies have shown that service management is associated with hospital service effectiveness and quality. Ward et al. [5] reported that hospital management practices are associated with several dimensions of quality of care, including structural quality, clinical quality, and patient outcomes. Weiner et al. [4] also found that the implementation of quality improvement in hospitals was related to performance on quality indicators, indicating that managerial processes play an important role in improving service outcomes. In relation to patient safety, Mistri et al. [16] emphasized that a strong patient safety culture encourages collaboration, open communication, and more coordinated care among healthcare teams. Similarly, Kakemam et al. [11] highlighted that hospital managers require leadership and management competencies to coordinate resources, manage staff, and align organizational activities with service goals. From the perspective of organizational effectiveness, Steers [17] emphasized that effectiveness is determined by goal achievement, employee competence in their roles, and work behavior that supports organizational objectives.

Despite these findings, hospitals in Indonesia continue to face several managerial challenges that may affect service effectiveness. Weak coordination among health workers, suboptimal supervision of standard operating procedure compliance, and limited continuous quality evaluation may contribute to service delays, inconsistencies between planning and implementation, and reduced patient satisfaction [18–20]. In the Aceh context, studies conducted at several hospitals have reported service-related problems, including untimely services, long waiting queues, limited information provided during treatment, responsiveness, interpersonal communication, response speed, and drug availability [21–23]. These issues indicate that hospital service problems are not only technical, but are also closely related to how management functions are applied in daily service operations.

In the context of modern hospital services, service effectiveness is also aligned with the principle of patient-centered care, where services are not only focused on internal organizational processes but also on patient needs, safety, and experience. This principle is reflected in hospital accreditation standards in Indonesia, which emphasize compliance with standard operating procedures, inter-unit coordination, continuity of care, service quality, and patient safety [3, 17, 24]. Therefore, strengthening service management is essential to ensure that hospital services are effective, measurable, and responsive to public expectations.

Ibnu Sina Hospital Aceh Besar is a private hospital that provides health services for communities in Aceh Besar and the surrounding areas. Patient visit data from 2014 to 2025 showed a fluctuating pattern, with a total of 183,609 visits, consisting of 47,674 inpatient visits and 135,935 outpatient visits. The number of visits increased substantially and reached its peak in 2023 with 32,035 visits, before declining to 30,824 visits in 2024 and 24,733 visits in 2025. This fluctuation indicates that hospital service utilization may change over time and may be influenced by internal organizational factors as well as external health service conditions. In health care, patient visits are not only determined by medical needs, but also by perceived service quality, accessibility, waiting time, inter-unit coordination, and the effectiveness of service delivery processes.

Based on this background, this study aims to analyze planning, organizing, actuating, and controlling as predictors of hospital service effectiveness at Ibnu Sina

Hospital Aceh Besar. The novelty of this study lies in the integration of POAC-based service management functions and Steers' organizational effectiveness perspective within a single PLS-SEM model. Unlike previous studies that have mainly examined service management, service quality, patient satisfaction, or hospital performance separately, this study simultaneously analyzes planning, organizing, actuating, and controlling as predictors of service effectiveness, which is measured through goal achievement, job competence, and employee behavior. To the authors' knowledge, this study has not previously been conducted at Ibnu Sina Hospital Aceh Besar, thereby providing context-specific evidence on service management in a private hospital in Aceh, Indonesia. The findings are expected to contribute to hospital management literature and provide practical insights for improving hospital service effectiveness.

## 2. Materials and Methods

### *2.1. Study Design and Setting*

This study used a quantitative explanatory design with a cross-sectional approach. The study was conducted at Ibnu Sina Hospital Aceh Besar, Aceh Province, Indonesia, from February to March 2026. The study aimed to examine planning, organizing, actuating, and controlling as predictors of hospital service effectiveness using Partial Least Squares Structural Equation Modeling (PLS-SEM).

### *2.2. Population and Sample*

The study population consisted of all employees of Ibnu Sina Hospital Aceh Besar who were involved in hospital management and service delivery, including health workers and non-health workers directly related to hospital service processes. Based on hospital staffing data, the total population was 177 employees. The sampling technique used was total sampling.

Ten respondents were involved in the pilot survey and were not included in the main study. Therefore, 167 employees were targeted in the main data collection. Of these, 123 complete responses were obtained and analyzed. The remaining responses were excluded because the questionnaires were not returned, incomplete, or the respondents could not be contacted again during data collection.

### *2.3. Inclusion and Exclusion Criteria*

Respondents were included if they were active permanent or contract employees, were directly involved in hospital service delivery, had worked for at least six months, and agreed to participate by signing informed consent. Respondents were excluded if they were on long-term leave, inactive during data collection, or returned incomplete questionnaires.

### *2.4. Variables and Measurement*

The independent variables were service management functions based on the POAC framework, consisting of planning, organizing, actuating, and controlling. Planning was measured using four indicators: service goal setting, work plan preparation, resource planning, and standard operating procedure preparation. Organizing was measured using task division, inter-unit coordination, organizational structure clarity, and role utilization based on staff competence. Actuating was measured using service implementation according to standard operating procedures, task implementation according to competence and authority, communication among staff and units, and staff responsiveness. Controlling was measured using service quality monitoring, service performance evaluation, corrective action, and service performance reporting.

The dependent variable was hospital service effectiveness, measured based on Steers' organizational effectiveness theory. This theory was selected because hospital service effectiveness in this study was not only viewed as service output, but also as an organizational achievement reflected in goal attainment, employee competence, and work behavior. In the hospital context, effective service delivery requires the achievement of service objectives, staff capability to perform duties according to their roles, and employee behavior that supports service quality and patient-centered care. Therefore, Steers' framework was considered relevant for measuring hospital service effectiveness through three indicators: goal achievement, job competence, and employee behavior [25]. Variables shown in Table 1.

### *2.5. Instrument and Data Collection*

Data were collected using a structured, closed-ended questionnaire. The questionnaire consisted of two sections: respondent characteristics and research variable measurements. Respondent characteristics included age, sex, educational background, employee group, work unit, position, and length of employment.

The research variables were measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Each indicator was measured using two items. The service management variables consisted of 32 items, while hospital service effectiveness consisted of 6 items, resulting in 38 measurement items. Some negative items were adjusted using reverse coding before analysis.

**Table 1.** Research variables and measurement indicators.

| Main Factor | Indicators |
|---|---|
| Planning (X1) - [3, 26] | X1.1 Establishment of hospital service goals in accordance with the vision, mission, and patient needs<br>X1.2 Preparation of medical and supporting service work plans<br>X1.3 Planning of hospital service resource needs<br>X1.4 Development and establishment of hospital service standard operating procedures (SOPs) as work guidelines |
| Organizing (X2) - [12, 27] | X2.1 Division of duties and responsibilities of health and non-health personnel in hospital services<br>X2.2 Coordination among service units (medical, nursing, pharmacy, administration, and supporting units)<br>X2.3 Clarity of organizational structure and lines of authority in hospital services<br>X2.4 Utilization of health personnel roles according to their competencies in the patient service process |
| Actuating (X3) - [14] | X3.1 Implementation of hospital services in accordance with applicable SOPs<br>X3.2 Implementation of health personnel duties according to their competencies and clinical authority<br>X3.3 Communication in service implementation among staff and across hospital units<br>X3.4 Responsiveness of health personnel in providing services to patients |
| Controlling (X4) - [13] | X4.1 Periodic monitoring of hospital service quality<br>X4.2 Evaluation of service outcomes and service unit performance<br>X4.3 Corrective actions for service deviations from SOPs<br>X4.4 Reporting and assessment of hospital service performance |
| Hospital service effectiveness (Y) - [25] | Y1. Goal achievement<br>Y2. Job competence<br>Y3. Employee behavior |

*2.6. Validity and Reliability*

A pilot survey was conducted with 10 respondents to assess item clarity, validity, and reliability. Instrument validity was tested using Corrected Item-Total Correlation, with a cut-off value of ≥ 0.30. Reliability was assessed using Cronbach's Alpha, with a threshold value of ≥ 0.70. All items met the validity criteria, and the overall Cronbach's Alpha value was 0.967, indicating very good internal consistency.

*2.7. Data Analysis*

Data processing included editing, coding, data entry, and tabulation. Descriptive analysis was used to describe respondent characteristics using frequencies and percentages. The main analytical method used in this study was Partial Least Squares Structural Equation Modeling (PLS-SEM). This method was selected because the study examined predictive relationships among latent constructs measured by several indicators, namely planning, organizing, actuating, controlling, and hospital service effectiveness. PLS-SEM is appropriate for analyzing complex models with latent variables, relatively small to medium sample sizes, and Likert-scale data, and it allows simultaneous evaluation of both the measurement model and the structural model [28–30].

For the PLS-SEM analysis, two items measuring the same indicator were averaged to form a composite indicator, which was then used as a manifest variable in the model. The analysis was conducted in two stages. First, the measurement model was evaluated to assess construct validity and reliability. Indicator reliability was assessed using outer loading, with values ≥ 0.70 considered acceptable. Convergent validity was evaluated using Average Variance Extracted (AVE), with values ≥ 0.50 indicating adequate convergent validity. Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability, with Cronbach's Alpha values ≥ 0.60 and Composite Reliability values ≥ 0.70 considered acceptable. Discriminant validity was evaluated to ensure that each construct was distinct from the other constructs in the model. Second, the structural model was evaluated using path coefficients, coefficient of determination ($R^2$), and bootstrapping. Path coefficients were used to assess the direction and strength of the relationships among variables, while $R^2$ was used to assess the explanatory power of the model. The $R^2$ values were interpreted as weak, moderate, and strong when they reached approximately 0.25, 0.50, and 0.75, respectively. The significance of the relationships was assessed using bootstrapping, with a t-statistic > 1.96 and a p-value < 0.05 indicating statistical significance [28–30].

*2.8. Ethical Considerations*

Ethical approval for this study was obtained from the Health Research Ethics Committee, Faculty of Medicine, Universitas Syiah Kuala, under approval number

**Table 3.** Descriptive statistics of study variables.

| Variable | Indicator | Mean | Category |
|---|---|---|---|
| Planning | X1.1 Service goal clarity | 4.60 | High |
| | X1.2 Service work plan preparation | 4.57 | High |
| | X1.3 Service resource planning | 4.54 | High |
| | X1.4 SOP development and establishment | 4.51 | High |
| Organizing | X2.1 Division of duties and responsibilities | 4.32 | High |
| | X2.2 Inter-unit coordination | 4.37 | High |
| | X2.3 Organizational structure and authority clarity | 4.39 | High |
| | X2.4 Role utilization based on competence | 4.32 | High |
| Actuating | X3.1 Service implementation according to SOP | 4.98 | High |
| | X3.2 Task implementation based on competence and authority | 4.87 | High |
| | X3.3 Communication among staff and hospital units | 4.97 | High |
| | X3.4 Staff responsiveness in providing services | 4.86 | High |
| Controlling | X4.1 Periodic service quality monitoring | 4.94 | High |
| | X4.2 Evaluation of service outcomes and unit performance | 4.90 | High |
| | X4.3 Corrective action for deviations from SOP | 4.86 | High |
| | X4.4 Reporting and assessment of service performance | 4.90 | High |
| Hospital service effectiveness | Y1 Goal achievement | 4.85 | High |
| | Y2 Job competence | 4.84 | High |
| | Y3 Employee behavior | 4.85 | High |

**Table 2.** Respondent characteristics.

| Characteristic | Category | n | % |
|---|---|---|---|
| Age | 25–34 years | 34 | 27.6 |
| | 35–44 years | 36 | 29.3 |
| | 45–54 years | 28 | 22.8 |
| | >54 years | 25 | 20.3 |
| Sex | Male | 19 | 15.4 |
| | Female | 104 | 84.6 |
| Education | Diploma III | 76 | 61.8 |
| | Bachelor/Diploma IV | 17 | 13.8 |
| | Professional education | 30 | 24.4 |
| Employee group | Health workers | 82 | 66.7 |
| | Non-health workers | 41 | 33.3 |
| Work unit | Emergency unit | 15 | 12.2 |
| | Inpatient unit | 15 | 12.2 |
| | Outpatient unit | 17 | 13.8 |
| | Pharmacy | 14 | 11.4 |
| | Laboratory | 21 | 17.1 |
| | Radiology | 22 | 17.9 |
| | Others | 19 | 15.4 |
| Length of employment | <1 year | 22 | 17.9 |
| | 1–3 years | 15 | 12.2 |
| | 4–6 years | 33 | 26.8 |
| | 7–10 years | 29 | 23.6 |
| | >10 years | 24 | 19.5 |

025/EA/FK/2026. All respondents were informed about the study objectives, procedures, benefits, and potential risks before participation. Participation was voluntary, and written informed consent was obtained from each respondent. Respondent anonymity and confidentiality were maintained throughout the study.

## 3. Results and Discussion

### *3.1. Respondent Characteristics*

A total of 123 complete responses were analyzed in this study, as shown in Table 2. Most respondents were aged 35–44 years (29.3%), followed by 25–34 years (27.6%). Female respondents dominated the sample (84.6%), while male respondents accounted for 15.4%. Most respondents had a diploma-level educational background (61.8%), and the majority were health workers (66.7%). Respondents were distributed across several hospital units, with the highest proportions from radiology (17.9%), laboratory (17.1%), and outpatient services (13.8%). In terms of work experience, most respondents had worked for 4–6 years (26.8%), followed by 7–10 years (23.6%). The respondents had sufficient experience and involvement in hospital service processes to assess service management implementation and effectiveness.

### *3.2. Descriptive Analysis of Study Variables*

The descriptive analysis showed that all variables were categorized as high based on the Three Box Method, as shown in Table 3. This indicates that respondents perceived the implementation of service management functions and hospital service effectiveness at Ibnu Sina Hospital Aceh Besar positively. Among the service management dimensions, actuating and controlling showed relatively high mean scores, suggesting that service implementation, compliance with standard procedures, monitoring, and evaluation were perceived as important aspects of hospital service management. The high score for hospital service effectiveness also indicates that respondents perceived the hospital as capable of achieving service goals, supporting staff competence, and maintaining employee behavior that contributes to service quality. Category interpretation was based on the Three Box Method: low = 1.00–2.33, moderate = 2.34–3.66, and high = 3.67–5.00 [31].

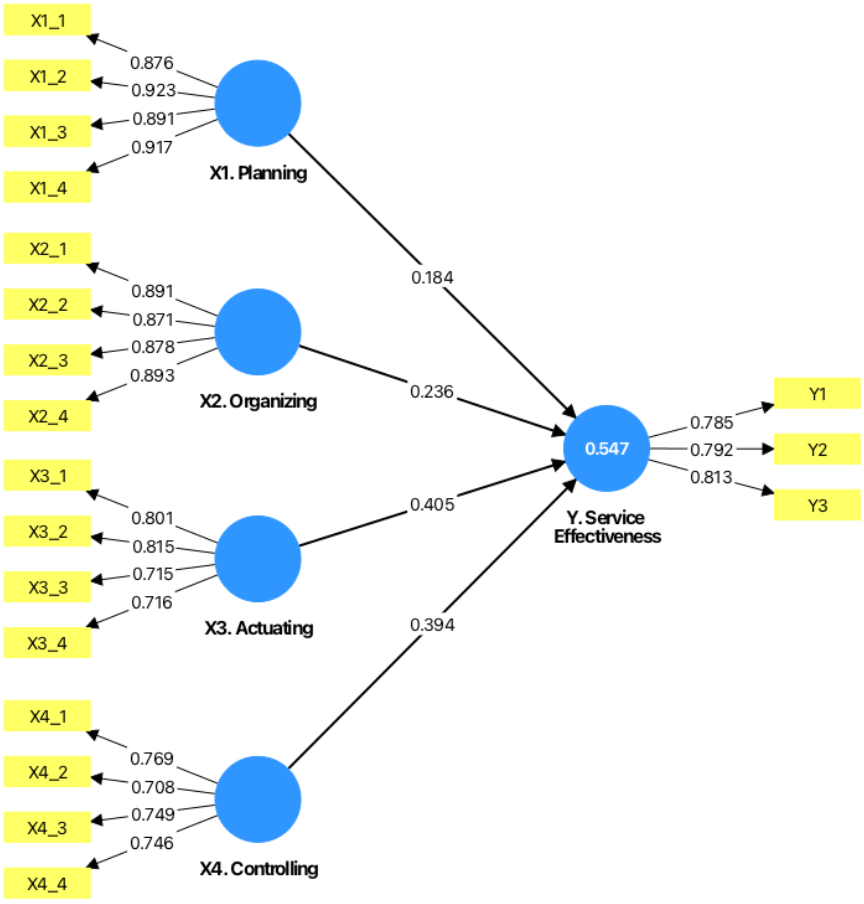


**Figure 1.** PLS-SEM model of service management functions and hospital service effectiveness.

*3.3. Measurement Model Evaluation*

The PLS-SEM model used to examine the relationship between service management functions and hospital service effectiveness is presented in Figure 1. The figure shows the outer loading values of each indicator, the path coefficients between constructs, and the coefficient of determination for hospital service effectiveness.

The measurement model was evaluated using outer loading, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability. As shown in Figure 1 and Table 4, all indicators had outer loading values above 0.70, indicating that the indicators were valid in reflecting their respective constructs. The AVE values for all constructs were above 0.50, confirming convergent validity. In addition, all constructs had Cronbach's Alpha values above the recommended threshold and Composite Reliability values above 0.70, indicating good internal consistency.

The summary of the measurement model evaluation is presented in Table 4. The results show that all constructs met the required validity and reliability criteria. Therefore, the measurement model was considered adequate for further structural model evaluation. These findings also support the reflective measurement approach used in this study, as each indicator was able to represent the latent construct adequately.

*3.4. Structural Model and Hypothesis Testing*

The structural model was evaluated using the coefficient of determination, path coefficients, t-statistics, and p-values. The structural model and hypothesis testing results are presented in Table 5. The $R^2$ value for hospital service effectiveness was 0.547, indicating that planning, organizing, actuating, and controlling explained 54.7% of the variance in hospital service effectiveness (Figure 1). This value falls into the moderate category, suggesting that the model had an adequate explanatory power. The remaining 45.3% may be explained by other factors outside the model, such as leadership, organizational culture, workload, work motivation, service facilities, or incentive systems.

As shown in Table 5, all four service management functions had positive and significant relationships with hospital service effectiveness. Actuating had the strongest relationship with hospital service effectiveness ($\beta = 0.405$, $p < 0.001$), followed by controlling ($\beta = 0.394$, $p < 0.001$), organizing ($\beta = 0.236$, $p < 0.001$), and planning ($\beta = 0.184$, $p = 0.019$). These findings support all proposed hypotheses and demonstrate that the implementation of

**Table 4.** Measurement model results.

| Construct | Outer Loading Range | AVE | Cronbach's Alpha | Composite Reliability | Interpretation |
|---|---|---|---|---|---|
| Planning | 0.876–0.923 | 0.813 | 0.927 | 0.946 | Valid and reliable |
| Organizing | 0.871–0.893 | 0.780 | 0.907 | 0.934 | Valid and reliable |
| Actuating | 0.715–0.815 | 0.582 | 0.770 | 0.847 | Valid and reliable |
| Controlling | 0.708–0.769 | 0.553 | 0.736 | 0.832 | Valid and reliable |
| Hospital service effectiveness | 0.832–0.881 | 0.635 | 0.713 | 0.839 | Valid and reliable |

**Table 5.** Structural model and hypothesis testing.

| Hypothesis | Relationship | Path Coefficient | t-statistic | p-value | Decision |
|---|---|---|---|---|---|
| $H_1$ | Planning → Hospital service effectiveness | 0.184 | 2.352 | 0.019 | Supported |
| $H_2$ | Organizing → Hospital service effectiveness | 0.236 | 3.563 | 0.000 | Supported |
| $H_3$ | Actuating → Hospital service effectiveness | 0.405 | 3.776 | 0.000 | Supported |
| $H_4$ | Controlling → Hospital service effectiveness | 0.394 | 3.784 | 0.000 | Supported |

service management functions is significantly associated with hospital service effectiveness.

*3.5. Discussion*

The findings of this study indicate that the implementation of service management functions has a positive contribution to hospital service effectiveness. The R-square value of 0.547 shows that planning, organizing, actuating, and controlling simultaneously explain 54.7% of the variation in service effectiveness. This indicates that the POAC-based service management model has moderate explanatory power in explaining hospital service effectiveness. The remaining variation may be influenced by other factors outside the model, such as leadership, organizational culture, workload, staff motivation, facilities, patient satisfaction, and incentive systems. This finding is in line with Hair et al. [32], who categorized an R-square value around 0.50 as moderate explanatory power in PLS-SEM analysis.

These findings support the view that hospital service effectiveness is not only determined by the availability of health workers, facilities, or formal procedures, but also by how managerial functions are implemented in daily service operations. Effective hospital management plays an important role in coordinating resources, arranging work processes, ensuring staff compliance with standards, and maintaining continuous quality improvement. This is consistent with Ward et al. [5], who reported that hospital management practices are associated with several dimensions of quality of care, including structural quality, clinical quality, and patient outcomes. Mosadeghrad [3] also emphasized that healthcare service quality is influenced by managerial factors, including planning, leadership, human resources, coordination, work processes, and organizational systems.

Partially, planning had a positive and significant effect on service effectiveness, with a path coefficient of 0.184. This finding indicates that clear service goals, work plans, resource readiness, and standard operating procedures provide an important foundation for effective hospital services. Although planning showed the lowest coefficient among the four management functions, it remains essential because it gives direction to service activities and helps the hospital align its resources with organizational goals. In hospital settings, weak planning may lead to unclear service targets, inefficient resource allocation, and inconsistency in service implementation. This finding is supported by Al-Ahmadi [26] and Mosadeghrad [3], who stated that planning, resource management, and organizational support are important factors in improving healthcare service performance and quality.

Organizing also had a positive and significant effect on service effectiveness, with a path coefficient of 0.236. This result suggests that clear task distribution, inter-unit coordination, organizational structure, and role allocation based on staff competence support effective service delivery. In hospital services, unclear roles and weak coordination may lead to overlapping responsibilities, delayed services, and inconsistent implementation of procedures. Therefore, organizing is important to ensure that each unit and staff member understands their responsibilities and works in an integrated manner to achieve service goals. This finding is consistent with Runtu et al. [12], who explained that organizational culture and coordination influence care coordination in hospitals. It also indicated that communication, teamwork, conflict management, authority, and autonomy are important organizational attributes influencing care coordination. Thus, strengthening organizing functions may help hospitals improve service integration and reduce fragmentation in service delivery.

Actuating was the strongest predictor of service effectiveness, with a path coefficient of 0.405. This finding

indicates that the success of hospital services is highly dependent on how services are implemented in daily practice. Compliance with standard operating procedures, staff competence, communication among health workers, and responsiveness to patients are direct operational aspects that shape service effectiveness. This result shows that service effectiveness is not only determined by planning documents or organizational structure, but also by the consistency of staff performance in real service situations. This finding is in line with Beauchemin et al. [14], who emphasized that implementation of clinical practice guidelines requires consistent application in healthcare settings. West et al. [33] also showed that staff engagement and performance in healthcare organizations are closely related to service quality and patient outcomes. In addition, staff engagement and performance have been associated with patient safety, patient satisfaction, and service outcomes in healthcare organizations. Therefore, the dominant role of actuating in this study may be explained by the operational nature of hospital services, where service effectiveness is directly experienced through daily staff actions [34, 35].

Controlling also had a strong positive and significant effect on service effectiveness, with a path coefficient of 0.394. This indicates that monitoring, evaluation, corrective action, and performance reporting are important in maintaining service quality and ensuring continuous improvement. In hospital services, controlling helps identify deviations from service standards, supports timely corrective actions, and ensures that service delivery remains aligned with quality and patient safety requirements. This finding is supported by Øvretveit [13], who stated that quality improvement and evaluation mechanisms are important in improving health service performance. Performance measurement can support organizational improvement by helping institutions monitor outcomes and take corrective actions.

Overall, the findings support the relevance of the POAC framework as a managerial approach for improving hospital service effectiveness. These findings indicate that POAC functions should not be viewed as isolated managerial activities, but as an integrated management cycle. Planning provides service direction, organizing translates plans into roles and coordination mechanisms, actuating ensures implementation in daily practice, and controlling evaluates whether implementation remains consistent with standards. Weakness in one function may reduce the effectiveness of the others. Therefore, hospital service effectiveness requires continuity between managerial planning, organizational coordination, operational implementation, and performance control.

For Ibnu Sina Hospital Aceh Besar, these findings suggest that managerial improvement should prioritize strengthening operational service implementation and quality control mechanisms, while still maintaining planning and organizing as supporting foundations. This can be done by ensuring regular SOP socialization, conducting competence-based task supervision, improving communication between clinical and supporting units, and establishing routine feedback mechanisms based on monitoring and evaluation results. Since controlling was also a strong predictor, evaluation findings should be followed by documented corrective actions and communicated to relevant units to support continuous improvement.

Theoretically, the findings support Steers' organizational effectiveness perspective, where effectiveness reflects goal achievement, employee competence in their roles, and work behavior that supports organizational objectives. In this study, POAC-based service management functions were significantly associated with these dimensions of effectiveness. Therefore, this study contributes to hospital management literature by showing that service effectiveness can be strengthened when managerial functions are systematically planned, clearly organized, consistently implemented, and continuously controlled.

## 4. Conclusions, Implications and Limitations

This study examined whether planning, organizing, actuating, and controlling were significant predictors of hospital service effectiveness at Ibnu Sina Hospital Aceh Besar. The findings supported all proposed hypotheses, showing that the four management functions had positive and significant relationships with hospital service effectiveness. The PLS-SEM results showed that these variables explained 54.7% of the variance in hospital service effectiveness, indicating moderate explanatory power.

Among the four management functions, actuating had the strongest relationship with hospital service effectiveness, followed by controlling, organizing, and planning. This finding indicates that service effectiveness is mainly strengthened through consistent implementation of service activities, compliance with standard operating procedures, competence-based task execution, effective inter-unit communication, staff responsiveness, and continuous monitoring and evaluation. These results support the relevance of the POAC framework in hospital service management and strengthen the view that organizational effectiveness is

reflected through goal achievement, job competence, and employee behavior.

The findings have practical and policy implications for hospital management. Hospital leaders should prioritize strengthening service implementation and quality control mechanisms through routine supervision, periodic evaluation, corrective actions, transparent performance reporting, and improved coordination among service units. Integrating the POAC framework into internal quality improvement programs, staff performance evaluation, service standardization, and accreditation readiness may help hospitals improve service effectiveness in a more systematic and sustainable manner.

This study has several limitations. The use of a self-assessment questionnaire may have introduced subjective response bias, and the cross-sectional design limits causal interpretation. In addition, the study was conducted in a single hospital and only included four management functions, while other factors such as leadership, organizational culture, workload, staff motivation, facilities, and incentive systems may also influence service effectiveness. Future studies should involve multiple hospitals with different ownership types, accreditation levels, and service capacities, and may include additional variables such as patient satisfaction, service quality indicators, leadership, and organizational culture. Longitudinal studies are also recommended to examine changes in service management and hospital service effectiveness over time.

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**Ethical Clearance:** Ethical approval for this study was obtained from the Health Research Ethics Committee, Faculty of Medicine, Universitas Syiah Kuala, under approval number 025/EA/FK/2026.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study. Respondents were informed about the objectives, procedures, benefits, and potential risks of the study before participation. Participation was voluntary, and respondent anonymity and confidentiality were maintained throughout the study.

**Data Availability Statement:** The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy and confidentiality considerations involving respondent information.

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