From Theory to Practice: A Dynamic Systems Model for Enhanced Governance in Higher Education

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Abstract:

This study aims to analyze the governance of higher education institutions facing specific challenges, using a dynamic system model to gain a deeper understanding compared to traditional governance approaches. The approach used in this study is qualitative, with a case study design and purposive sampling technique to select participants. Data were collected through interviews, observations, and document analysis, which were then analyzed using thematic analysis. The study results indicate that effective governance relies on adaptive leadership, transparency in decision-making, and active stakeholder participation. This study contributes by developing a measurable framework to assess these governance elements and demonstrating how a dynamic system model can improve institutional performance. Practical implications of this study include the importance of aligning leadership practices with the specific needs of the institution, as well as the need to increase stakeholder engagement. Recommendations generated from this study are expected to be applied to other higher education institutions facing similar challenges to improve governance effectiveness and institutional performance.

Keywords: *Educational Governance, Dynamic System Model, Adaptive Leadership, Transparency*

Abstrak:

Penelitian ini bertujuan untuk menganalisis tata kelola perguruan tinggi yang menghadapi tantangan khusus, dengan menggunakan model sistem dinamis untuk memperoleh pemahaman yang lebih mendalam dibandingkan dengan pendekatan tata kelola tradisional. Pendekatan yang digunakan dalam penelitian ini adalah kualitatif dengan desain studi kasus, serta teknik purposive sampling untuk memilih partisipan. Data dikumpulkan melalui wawancara, observasi, dan analisis dokumen, yang kemudian dianalisis dengan menggunakan analisis tematik. Hasil penelitian menunjukkan bahwa tata kelola yang efektif bergantung pada kepemimpinan yang adaptif, transparansi dalam pengambilan keputusan, serta partisipasi aktif pemangku kepentingan. Penelitian ini memberikan kontribusi dengan mengembangkan kerangka kerja terukur untuk menilai elemen-elemen tata kelola tersebut dan menunjukkan bagaimana model sistem dinamis dapat meningkatkan kinerja institusi. Implikasi praktis dari penelitian ini mencakup pentingnya penyelarasan praktik kepemimpinan dengan kebutuhan spesifik institusi, serta perlunya peningkatan keterlibatan pemangku kepentingan. Rekomendasi yang dihasilkan dari studi ini diharapkan dapat diterapkan pada lembaga pendidikan tinggi lain yang menghadapi tantangan serupa, guna meningkatkan efektivitas tata kelola dan kinerja institusi.

Kata Kunci: *Tata Kelola Pendidikan, Model Sistem Dinamis, Kepemimpinan Adaptif, Transparansi*

INTRODUCTION

Higher education governance has increasingly become a focal point of research due to its critical role in shaping the quality and effectiveness of educational institutions (Seyfried & Pohlenz, 2018; Yembergenova, 2022). Governance in higher education encompasses the frameworks, policies, and processes through which institutions are directed and controlled, impacting their ability to fulfill academic, administrative, and societal objectives (Kappo-Abidemi & Kanayo, 2020). Effective governance is vital for ensuring institutions can adapt to the rapidly changing educational landscape, meet stakeholder expectations, and sustain high standards of academic excellence (Chankseliani et al., 2021).

The governance of higher education institutions is challenged by many factors, including financial constraints, increasing competition, evolving technological advancements, and shifting policy landscapes (George, 2023; Li, 2024; Wawak et al., 2024). In the case of STAI Ki Ageng Pekalongan, these challenges are further intensified by its unique context, such as limited financial resources, geographic remoteness, and the need to balance its religious-based curriculum with national educational policies. Unlike larger urban institutions, this higher education faces difficulties attracting experienced faculty and accessing cutting-edge technology, making it harder to stay competitive in a rapidly changing educational landscape. These challenges require a more adaptive and flexible governance approach that addresses the institution's distinct needs and context (Hunt & Madhavaram, 2020; Scalabrin Bianchi et al., 2021). Traditional governance models, which often rely on hierarchical and rigid structures, may need to be revised to address the complexities of modern higher education environments (Stein, 2021).

A dynamic system model offers a promising approach to understanding and improving the higher education governance context (Priyadarshini, 2022; Yin, 2022). Unlike traditional governance models, which often rely on rigid, hierarchy-based structures, the dynamic system model captures the complexity and interconnectivity of governance elements in modern higher education environments more effectively. Traditional models may need help to adapt to rapidly changing internal and external factors, such as technological advancements, evolving policies, and financial constraints. In contrast, the dynamic system model allows for continuous adaptation and feedback, enabling institutions to respond more flexibly and efficiently to challenges. By simulating the interactions between leadership, resource allocation, academic performance, and stakeholder engagement, the dynamic system model provides deeper insights into governance processes that static or hierarchical models may overlook. This model emphasizes the interconnectedness and interdependencies of various governance components, allowing for the simulation of different scenarios and the prediction of outcomes (Cabrera & Cabrera, 2019). By incorporating feedback loops and adaptive mechanisms, a dynamic system model can provide a more holistic and responsive framework for governance (Al Subait, 2022).

This study's novelty lies in applying a dynamic systems model to improve governance in higher education institutions, which face unique challenges such as resource constraints and difficulty attracting experienced faculty. Unlike traditional hierarchical models, this model offers a more flexible approach to addressing external and internal changes, such as educational policies and technological advances. By integrating governance elements into a single, interconnected framework, this study provides new insights into how feedback loops and scenario simulations can improve the effectiveness and responsiveness of governance in faith-based higher education institutions.

STAI Ki Ageng Pekalongan serves as an ideal case study for exploring the application of a dynamic system model in higher education governance. As a higher education institution, it faces unique challenges and opportunities that reflect broader trends in the sector (Bianchi & Douglas, 2024; Hunt & Madhavaram, 2020). Understanding how governance operates within this context can provide valuable insights into the effectiveness of different strategies and the potential for innovation and improvement (Ara et al., 2021). The primary objective of this study is to develop and apply a dynamic system model to analyze and improve the governance mechanisms at STAI Ki Ageng Pekalongan. Specifically, this model is expected to provide insights into how governance can be more adaptive and responsive to the institution's unique challenges. The application of the dynamic system model aims to inform policy-making, enhance management structures, and foster more effective relationships with stakeholders by identifying the key drivers of governance success, such as leadership adaptability, resource allocation efficiency, and stakeholder engagement. The study will address the following research questions: (1) How can the dynamic system model improve decision-making processes at STAI Ki Ageng Pekalongan? (2) How does the model enhance stakeholder participation and transparency? (3) How does the model contribute to optimizing resource allocation and institutional performance?

This study introduces an innovative approach to understanding and improving governance in higher education using a dynamic systems model. The model offers significant advancements over traditional static frameworks by capturing the complex and interdependent nature of governance elements such as leadership, resource allocation, academic performance, and stakeholder engagement. Unlike conventional methods, the dynamic systems model provides a holistic and real-time analysis, allowing for the simulation of multiple scenarios and prediction of outcomes of different governance strategies. This approach enhances understanding of governance mechanisms and offers practical tools for institutions to adapt and evolve their governance practices in response to changing conditions.

RESEARCH METHOD

This study employs a qualitative case study approach to examine STAI Ki Ageng Pekalongan governance. This method captures the complexity of governance dynamics, focusing on leadership, resource management, and stakeholder engagement. It offers detailed insights into how these elements adapt to internal and external pressures, providing a framework for adaptive strategies

in higher education governance (Bradley et al., 2021; Evmenov et al., 2021)

The study's population includes administrative Staff, department members, and key stakeholders at STAI Ki Ageng Pekalongan, who were selected for direct involvement in governance processes. Administrative Staff provides insights into daily management and resource allocation, while department members contribute perspectives on academic governance. Key stakeholders, including community leaders, highlight external influences on governance. Respondents are grouped into administrative, academic, and external stakeholders to capture diverse perspectives. Using purposive sampling, the research ensures representation across roles to examine governance comprehensively. Table 1 presents the composition of the participant sample.

Table 1. Sample Composition of Participants in the Study

Participan Group	Participants	Description
Administrative Staff	5	Includes staff responsible for institutional operations and administration
Department Members	5	Faculty members representing various academic departments
Stakeholders	5	Governing board members, alumni, and community representatives who influence or are impacted by institutional decisions
Total Participants	**15**	**Comprehensive representation from diverse roles within the institution**

Data collection utilized semi-structured interviews with 15 participants to explore governance practices, decision-making, and challenges, complemented by two 90-minute focus group discussions with administrative Staff and department members. Document analysis of strategic plans, policies, and meeting minutes provided additional insights. Thematic analysis, involving iterative coding and theme refinement, ensured patterns accurately reflected the data. Triangulation with institutional reports and member checking validated findings, enhancing credibility. This approach combined diverse data sources and rigorous analysis to understand higher education governance dynamics comprehensively.

RESULT AND DISCUSSION
Result
Governance Structure and Decision-Making Processes

The findings from the semi-structured interviews, focus group discussions, and document analysis reveal a multi-layered governance structure at STAI Ki Ageng Pekalongan. Interviews with administrative Staff and department heads highlighted multiple decision-making levels, where senior leaders make strategic decisions, while operational tasks are delegated to mid-level management. For example, one department head stated, 'Major policy decisions come from the top, but we are responsible for implementing them and ensuring alignment with departmental needs,' illustrating the vertical hierarchy within the governance structure. Focus group discussions with key stakeholders further supported this, emphasizing the need for better communication between these layers to improve decision-making efficiency.

Document analysis, such as institutional reports and meeting minutes, also revealed the formal roles and responsibilities assigned to different governance bodies, demonstrating the segmented nature of the decision-making process. For example, the analysis showed that financial decisions are handled separately from academic matters, reinforcing the idea of a multi-layered structure. These multiple data sources consistently reflect a complex governance framework, where different levels interact to manage various aspects of the institution's operations.

The institution's governance is characterized by a hierarchical framework, with the governing board at the top, followed by senior administrative Staff, departments, and other stakeholders. Interviews with senior administrators highlighted the central role of the governing board in strategic decision-making, while department heads and administrative Staff primarily handle operational decisions.
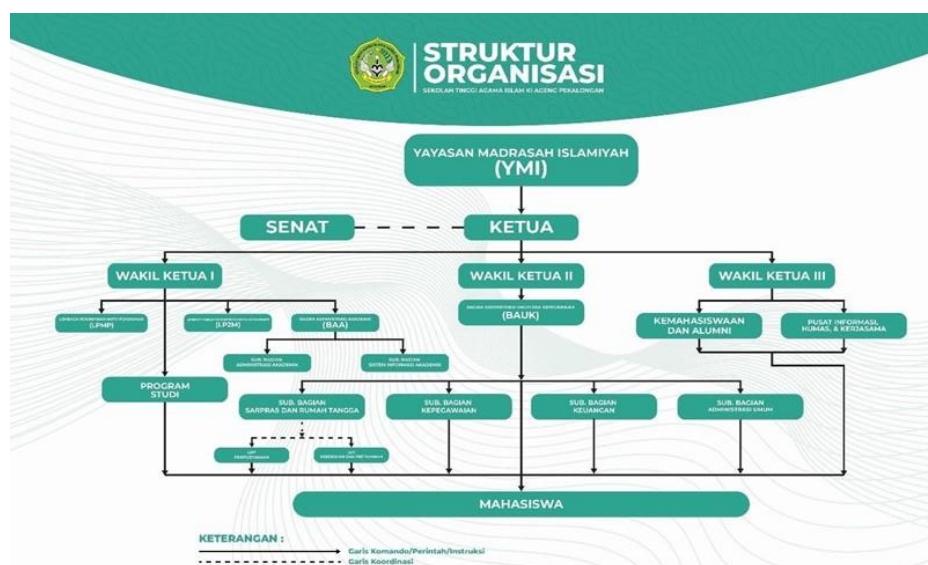
Figure 1. Multi-layered governance structure at STAI Ki Ageng Pekalongan

The governance structure of STAI Ki Ageng Pekalongan, as depicted in the organizational chart, is designed to ensure efficient decision-making and effective management of the institution. However, empirical data from interviews and internal documents suggest mixed results in practice. While the structure clearly defines roles and responsibilities, interviews with Staff revealed challenges in communication between different levels of governance. One administrative Staff member noted, 'Decisions from senior management often take time to reach us, and by the time they do, it is sometimes too late to make necessary adjustments,' highlighting delays in decision implementation. Additionally, internal meeting minutes show instances where decisions regarding budget allocations were delayed due to a lack of coordination between the financial and academic departments.

Focus group discussions with department heads also revealed that while the structure provides a transparent chain of command, it can sometimes hinder collaboration across departments. For example, one participant mentioned, 'We often face difficulties in collaborating on interdisciplinary projects because

decisions need approval from several layers.' These findings suggest that while the structure is intended to streamline decision-making, it sometimes creates bottlenecks that affect overall efficiency. At the apex of the structure is the Ketua (Chairman), who oversees the institution's overall operations and strategic direction. The Chairman is supported by three Vice Chairmen (Vice Chairman I, II, and III), each responsible for specific areas: Vice Chairman I focuses on academic affairs, Vice Chairman II on administration and finance, and Vice Chairman III on student affairs and alums relations. The organizational structure also includes the Senate, which is crucial in advising the Chairman and maintaining academic standards and policies.

A combination of top-down and collaborative approaches characterizes the decision-making processes at this institution. Interviews with department heads and administrative Staff highlighted instances where collaborative approaches were used, particularly in academic program development and resource allocation. For example, one department head mentioned, 'When we develop new courses, input from both faculty and administrators is gathered through committees before final approval by senior management,' demonstrating collaboration in academic decision-making. However, challenges in implementing this approach were also noted. Several interviewees pointed out conflicts between the top-down directives from senior leadership and the more collaborative processes desired by department members. One Staff member commented, 'Sometimes, even after extensive discussions at the department level, decisions from top management override our input, which can cause frustration.' Internal meeting documents also revealed instances where collaborative efforts were stalled due to a lack of alignment between different governance levels. For example, the decision to implement a new digital learning platform faced delays because the input from faculty was not fully integrated into the final decision by senior leadership. These examples illustrate the complexity of governance at college, where the balance between top-down and collaborative approaches can sometimes lead to tensions and inefficiencies.

The Chairman and Vice Chairmen make strategic decisions that are then cascaded down to various departments and sub-departments, such as academic programs, student services, and administrative support units. For instance, the academic programs are directly managed under the purview of Vice Chairman I, with specific sub-units like LPM (Quality Assurance), LP2M (Research and Community Service), and BAA (Academic Administration Bureau) handling detailed operational aspects. This hierarchical yet inclusive approach allows for centralized strategic oversight and decentralized operational execution, ensuring that decisions are well-informed and contextually relevant.

Resource Allocation and Financial Management

Resource allocation and financial management emerged as significant themes in STAI Ki Ageng Pekalongan governance. Document analysis of financial reports and strategic plans indicated that the institution faces financial constraints, affecting its ability to invest in infrastructure, Department development, and research activities. Interviews with administrative Staff revealed that budget

allocation is often a contentious issue, with different departments competing for limited resources.

Table 2 illustrates the allocation of the annual budget across various departments. The data show that a substantial portion of the budget is allocated to administrative expenses, with relatively less funding for academic programs and research initiatives. This imbalance was a concern among department members, who argued that inadequate funding hampers academic excellence and innovation.

Table 2. The allocation of the Annual Budget Across Various Departments

Department	Budget Allocation (%)
Administration	35%
Academic Programs	25%
Research Initiatives	15%
Infrastructure	15%
Community Engagement	10%

Resource allocation and financial management at this higher education are critical components of the institution's governance framework, ensuring funds are strategically distributed to support various departments and initiatives. Table 1 shows the annual budget allocation across different departments: Administration (35%), Academic Programs (25%), Research Initiatives (15%), Infrastructure (15%), and Community Engagement (10%). This allocation reflects the institution's priorities, with a significant portion of the budget dedicated to administrative functions to maintain operational efficiency. The emphasis on academic programs and research initiatives highlights the institution's commitment to enhancing educational quality and advancing scholarly activities. The allocation for infrastructure and community engagement underscores the importance of providing a conducive learning environment and fostering strong ties with the surrounding community.

The interview findings provided more profound insights into the rationale behind these allocations. Administrative Staff emphasized that a large portion of the budget is allocated to administration due to the need to streamline operations and address outdated systems, which have hindered efficiency in the past. One Staff member commented, "We have to invest more in administration to ensure smooth day-to-day operations; otherwise, everything else slows down." Faculty members highlighted that while academic programs and research are prioritized, there is a need for increased funding in these areas to stay competitive with larger institutions. One faculty member remarked, "The current allocation for academic and research initiatives is helpful but needs to grow if we want to attract more experienced researchers and improve our academic reputation."

In addition, stakeholders from the community mentioned that while the institution has made strides in community engagement, the limited budget allocation (10%) makes it challenging to expand outreach programs. A community representative stated, "We see the efforts made by the institution, but there is potential to do more if funding for community projects increases." These interview findings highlight the challenges of this higher education faces in balancing its financial priorities, and they reinforce the need for a more adaptive and responsive

governance approach that reflects the evolving needs of the institution and its stakeholders.

Stakeholder Engagement and Participation

Thematic analysis of the STAI Ki Ageng Pekalongan data reveals that stakeholder engagement is a fundamental aspect of the institution's governance framework. Faculty, students, alums, and community members are involved in decision-making through regular meetings, forums, and consultations. This inclusive approach ensures that a diverse range of perspectives is considered, enhancing the quality of decisions and fostering a sense of ownership and commitment among stakeholders. For example, faculty members have reported that their suggestions regarding curriculum development are often implemented, which increases their motivation and dedication.

In addition, interview data with some alumni revealed they felt more connected to the university after being allowed to provide input in meetings and forums involving them. This approach strengthens the relationship between the institution and stakeholders and improves the quality of decision-making that is more responsive to the needs of various parties.

Challenges and Opportunities

The research identified several challenges and opportunities related to governance at STAI Ki Ageng Pekalongan. Key challenges identified include financial limitations, bureaucratic inefficiencies, and the need for capacity building among administrative Staff. Financial constraints directly affect the performance of academic departments by limiting resources for research, faculty development, and infrastructure improvements. For instance, interviews with department heads revealed that budgetary restrictions often lead to delays in purchasing new equipment or accessing updated learning materials, which impacts both teaching quality and student outcomes. One department head noted, 'We have ambitious plans to improve our programs, but we need adequate funding to keep up with technological advancements in our field. Bureaucratic inefficiencies were another major concern, particularly in decision-making processes. Staff reported that lengthy approval procedures for even routine tasks create delays, slowing down the implementation of key initiatives. As one administrative Staff member shared, 'It can take weeks to get approval for something as simple as hiring temporary Staff during busy periods, which affects our ability to operate efficiently.' These bureaucratic hurdles often lead to frustration and low morale among Staff

Despite these challenges, the institution has opportunities to leverage its strong community ties, diversify its funding sources, and enhance its academic offerings. Participants highlighted the potential for developing partnerships with local businesses and government agencies to overcome financial constraints. Additionally, investing in professional development programs for administrative Staff was crucial for improving governance efficiency and effectiveness.

Discussion

Based on the study results above, the institution's governance structure shows similarities and differences compared to other higher education

institutions. As Machado-Taylor and Matias (2022) found, many institutions also implement a hierarchical structure with a clear delineation of responsibilities among senior management to ensure accountability and efficiency. However, the explicit inclusion of community engagement and alums relations within the governance framework at this institution is relatively unique. This focus aligns with research by Gupta (2020), highlighting the increasing importance of stakeholder engagement in higher education governance. Furthermore, the presence of the Senate as an advisory body ensures academic integrity and quality are maintained, reflecting a commitment to upholding high educational standards, a feature common in successful governance models as noted by Kanyip (2020).

Regarding budget allocation, STAI Ki Ageng Pekalongan shows similarities and differences from other institutions. As noted by Al Subait (2022), Evmenov et al. (2021), and Kusumastuti & Rochanah (2021), many universities allocate a significant portion of their budgets to administration to ensure smooth operations, which aligns with STAI Ki Ageng Pekalongan's allocation. However, the institution's specific emphasis on community engagement (10%) is higher than in some other universities, where community outreach often receives less funding. This distinct focus aligns with the institution's mission to be a center of excellence in education and community development. Moreover, the allocation for research initiatives (15%) is comparable to the findings by Bandiyono (2020), who highlight the increasing importance of research in higher education budgets, reflecting a broader trend towards fostering innovation and academic excellence.

Despite having a well-structured budget, this institution needs help with location and financial management challenges. Limited financial resources require careful prioritization and strategic investment to achieve the institution's goals. The thematic analysis of interviews with financial administrators revealed that while the current budget allocation supports essential functions, there is a need for more flexible funding to respond to emerging needs and opportunities. This finding aligns with research by Bradley et al. (2021) and Guerrero and Castañeda (2020), who argue that dynamic financial management practices are crucial for higher education institutions to respond effectively to changing educational landscapes. STAI Ki Ageng Pekalongan has implemented periodic budget reviews and performance-based funding allocations and is seeking additional revenue streams through partnerships and grants to address these challenges. These strategies aim to enhance financial sustainability and ensure resource allocation aligns with the institution's strategic objectives.

Effective communication and feedback mechanisms are crucial for stakeholder engagement at the institution. The institution utilizes various platforms like email newsletters, social media updates, and face-to-face meetings to inform stakeholders about ongoing initiatives and developments. Additionally, surveys, suggestion boxes, and feedback forms are regularly employed to capture the opinions and concerns of students and faculty. The thematic analysis highlighted that these communication strategies enhance transparency and build trust and credibility among stakeholders. For instance, students have expressed appreciation for being able to voice their concerns through anonymous surveys, which often lead to tangible improvements. This aligns with the findings of

Oladeinde et al. (2023), who argue that effective communication is crucial for building trust and ensuring stakeholder engagement in organizational governance.

Despite the positive aspects, the thematic analysis also identified several challenges in stakeholder engagement at this institution. One of the main challenges is the need for more consistent communication between the institution and key stakeholders, particularly alumni. Interviews revealed that many alums feel disconnected from the institution due to minimal involvement in decision-making processes and limited opportunities to contribute to ongoing initiatives. As one alumnus shared, "We are only contacted for donations or events, but there is no real effort to engage us in discussions about the institution's future direction." The absence of formal mechanisms compounds this sense of alienation in gathering feedback from alums. This was also reflected in institutional documents where alum contributions to governance were not prominently featured.

Additionally, faculty members expressed concerns about the limited involvement of external stakeholders in academic program development. One faculty member remarked, "We rarely see input from industry partners or alumni in developing our curriculum, even though their insights could be valuable." These examples highlight specific challenges in stakeholder engagement, particularly the lack of structured, ongoing communication and collaboration with alums and external partners, which ultimately affects their sense of connection and contribution to the institution. Furthermore, some stakeholders expressed concerns about the effectiveness of feedback mechanisms, feeling that their input was not always acted upon.

The thematic analysis underscored the significant impact of stakeholder engagement on institutional performance at this institution. The active involvement of stakeholders in governance processes has led to more informed and effective decision-making, contributing to the institution's overall success. Collaborative efforts between faculty and administrative Staff have resulted in the development of innovative academic programs that better meet the needs of students and the job market. Furthermore, engagement with community representatives has facilitated partnerships and initiatives that enhance the institution's social and economic contributions to the local area. This finding is supported by research from Reinhardt (2021), who suggests that stakeholder engagement can significantly enhance organizational performance by leveraging the strengths and resources of a diverse stakeholder base. This institution has driven continuous improvement and sustainability by fostering a culture of inclusivity and collaboration.

CONCLUSION

This study provides important insights into higher education governance, highlighting the role of adaptive leadership, transparency in decision-making, and stakeholder engagement at STAI Ki Ageng Pekalongan. Key findings suggest that adaptive leadership is implemented through adjustments to resource constraints and external pressures, although this needs to be improved in long-term planning. Furthermore, despite the institution's leadership commitment to transparency,

information flows across organizational levels remain inconsistent, leading to delays in policy implementation. The study also found that stakeholder engagement, particularly alums and external partners, is still poorly structured, suggesting the need for increased collaboration and more systematic feedback.

This study contributes significantly to understanding higher education governance, particularly in the context of faith-based higher education. However, this study has limitations, primarily because it was conducted at a single institution, which limits the generalizability of the findings. Future studies should include comparisons between higher education institutions and use quantitative approaches to reduce subjectivity. Furthermore, further research could explore the influence of external pressures, such as government policies, on higher education governance to gain a more comprehensive picture of the challenges faced by educational institutions.

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