Governance and Innovation in Muhammadiyah Universities in Indonesia: A Literature-Based Mapping of Organizational Competitiveness

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Keyword: Higher Education, Public Policy, Leadership, Institutional Innovation, Organizational Governance.	**Abstract:** Muhammadiyah Universities in Indonesia face increasing demands to enhance institutional competitiveness, governance quality, and innovation capacity in response to digital transformation and global educational shifts. Despite numerous studies on leadership models, quality management, and technology integration, the academic literature remains fragmented and lacks a comprehensive thematic and conceptual mapping. This study aims to address that gap by systematically analyzing the evolution of governance and innovation topics in Muhammadiyah Universities over the past decade. Using a bibliometric approach based on Scopus data, the research applied the PRISMA protocol to ensure transparency in literature selection and employed RStudio-Biblioshiny and CiteSpace for data processing and visualization. A total of 214 peer-reviewed journal articles published between 2011 and 2024 were analyzed to identify dominant themes, citation bursts, and thematic clusters. The results reveal that topics such as "Higher Education," "Muhammadiyah," and "Organizational Commitment" form the conceptual core, while emerging themes like "Social Media," "Student," and "Education" reflect a shift toward participatory and digital strategies. Citation burst analysis highlights growing attention to "Employee Performance" and "Classroom Management," indicating a strategic focus on human resource development. The study concludes that governance and innovation at Muhammadiyah Universities are multidimensional, involving policy, technology, organizational culture, and Islamic values. These findings provide an empirical foundation for evidence-based institutional strategies and open pathways for future exploration of inclusive and adaptive governance models aligned with the challenges of educational disruption.

INTRODUCTION

Muhammadiyah Higher Education Institutions are an integral part of Indonesia's higher education system, contributing significantly to the development of human resources based on Islamic values (Ambarwati & Sari, 2024). With over 160 institutions, including universities, colleges, institutes, academies, and polytechnics (Muhammadiyah Higher Education Council, 2025), Muhammadiyah Higher Education Institutions play a strategic role in expanding access to education, strengthening national character, and promoting institutional innovation. In the context of globalization and digital

transformation, these institutions face demands to continuously improve competitiveness, governance efficiency, and academic quality (Hamami & Nuryana, 2022).

Several studies have highlighted the approaches used by Muhammadiyah Higher Education Institutions to strengthen institutional governance, such as the implementation of Total Quality Management (TQM), Muhammadiyah-based leadership, and the principles of Good University Governance (Bidayati et al., 2023; Rahayu et al., 2018). On the other hand, studies on information technology integration, organizational culture strengthening, and student participation show that institutional innovation in PTMs is multidimensional and contextual (Kazemian & Grant, 2020; Syamsudin et al., 2019). Although the contributions of these studies are significant, their approaches remain fragmented and have not provided a comprehensive overview of the thematic dynamics and conceptual evolution in the academic literature on PTM.
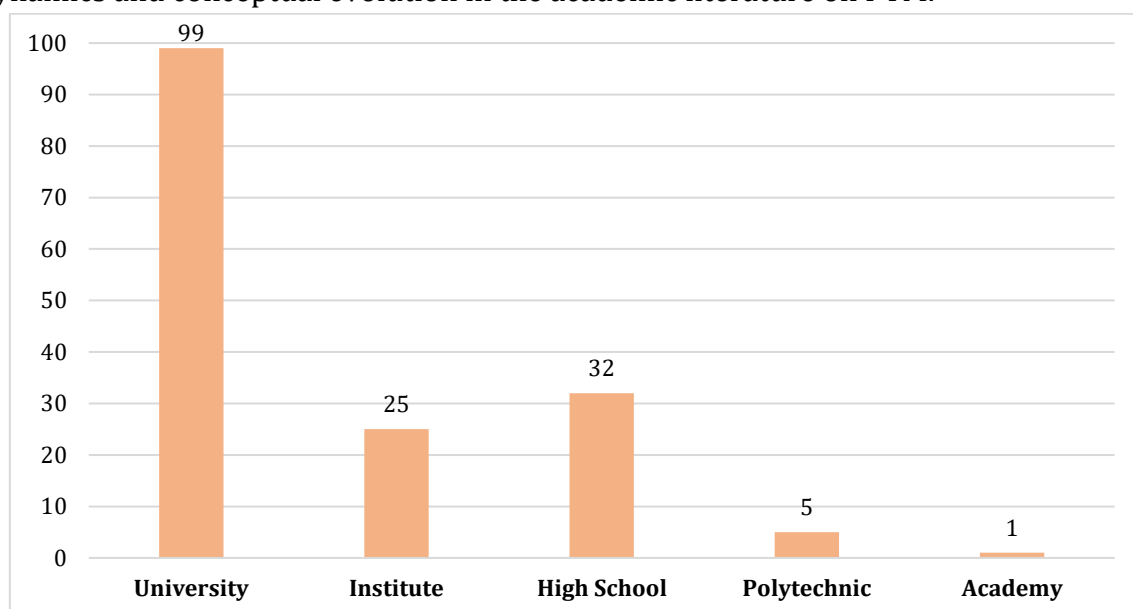

Fugure 1. Number of Muhammadiyah Universities in Indonesia
Source: Muhammadiyah Higher Education, Research, and Development Council, 2025

The main gap in this field is the absence of a systematic and data-driven literature mapping to identify research trends, citation strength, and inter-topic relationships in studies on governance and innovation in Muhammadiyah Higher Education Institutions. The research question that arises is: what are the thematic patterns and conceptual evolution in the academic literature on governance and innovation in Muhammadiyah Higher Education Institutions over the past decade? Is there a shift in focus from traditional approaches toward digital and participatory strategies? The challenge to previous work lies in the lack of integration between bibliometric analysis and thematic mapping, which could provide an empirical foundation for institutional policy-making.

This study aims to answer these questions using a bibliometric approach based on Scopus data, analyzed through the PRISMA protocol to ensure transparency and validity in literature selection (Haddaway et al., 2022). A total of 214 relevant documents were analyzed using RStudio-Biblioshiny and CiteSpace to map topic trends, citation strength,

and thematic maps. This study combines quantitative analysis and literature network visualization to uncover the dynamics of governance and innovation at Muhammadiyah Universities over time. Thus, this study offers a new, more comprehensive approach compared to previous studies.

The main contribution of this research lies in its ability to identify dominant themes such as "Higher Education," "Muhammadiyah," and "Organizational Commitment," as well as uncover emerging topics such as "Social Media," "Education," and 'Student' (Shanks & Young, 2019; Qorib & Umiarso, 2025). The citation bursts analysis shows that issues such as "Employee Performance" and "Classroom Management" have received a surge of attention in recent years, signaling the urgency of increasing human resource capacity in the PTM environment. These findings not only enrich the academic literature but also provide a basis for evidence-based institutional policy development.

Theoretically, this research expands our understanding of governance and innovation in the context of Islamic higher education in Indonesia. Practically, the results of this study can be used by Muhammadiyah University leaders and the Muhammadiyah Research and Development Council to design institutional strategies that support internationalization, digitalization, and academic quality enhancement. With a data-driven approach and thematic visualization, this research also opens up space for further exploration of adaptive and sustainable governance models, in line with the challenges of the era of educational disruption.

RESEARCH METHOD

This study employed a systematic literature review using the Scopus database to examine governance and innovation in Muhammadiyah Higher Education Institutions in Indonesia. Guided by the PRISMA protocol (Haddaway et al., 2022), the research ensured transparency and rigor in the identification, screening, and selection of relevant literature published between 2011 and 2024. A total of 214 peer-reviewed journal articles written in English were included based on strict inclusion and exclusion criteria, focusing on empirical studies related to institutional strategies, digital transformation, and organizational competitiveness. The selected documents were processed using RStudio-Biblioshiny and CiteSpace to conduct bibliometric analysis, including keyword mapping, citation bursts, thematic clustering, and conceptual evolution (Lawelai, 2023; Men et al., 2025).. This integrated approach enabled the visualization of research trends and the identification of dominant and emerging themes, providing a comprehensive foundation for understanding the strategic development of Muhammadiyah universities.

Inclusion and Exclusion Criteria

Following the initial search phase, all identified studies were rigorously screened to ensure relevance to the research focus on governance and innovation within Muhammadiyah Higher Education Institutions in Indonesia. The review was limited to publications from 2011 to 2024 to capture contemporary trends and avoid historical bias in institutional transformation. Inclusion criteria comprised:

- Articles written in English to ensure analytical consistency and international accessibility.
- Peer-reviewed journal articles only, excluding conference papers, posters, and brief reports.
- Studies that directly address institutional governance strategies, digital innovation, leadership models, and organizational competitiveness within Muhammadiyah universities.
- The most recent version of duplicated publications to ensure data accuracy.

Exclusion criteria included:

- Non-English publications.
- Articles offering only normative or policy recommendations without empirical grounding.
- Editorials, book chapters, and non-peer-reviewed materials.
- Studies lacking methodological rigor, such as the absence of data sources, analytical techniques, or validation procedures.
- Documents under five pages, deemed insufficient for comprehensive analysis.
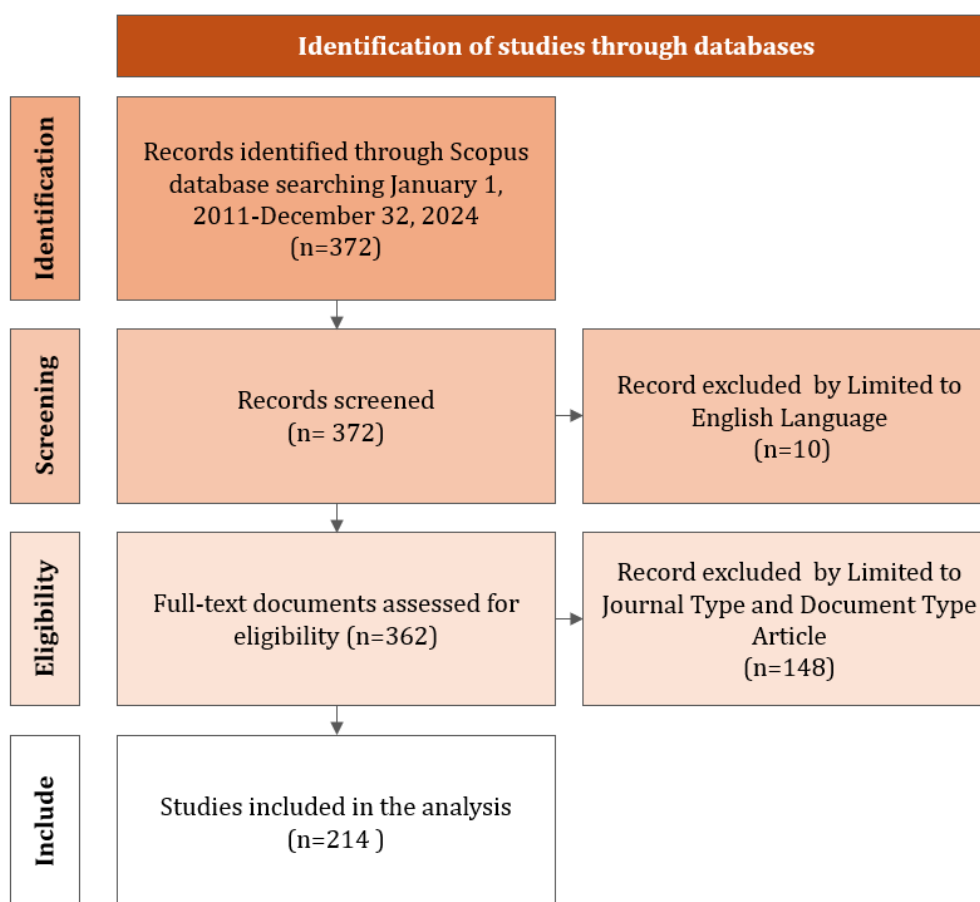- Publications without an accessible full text, which hindered detailed evaluation.

Identification of studies through databases

Identification

Records identified through Scopus database searching January 1, 2011-December 32, 2024 (n=372)

Screening

Records screened (n= 372)

Record excluded by Limited to English Language (n=10)

Eligibility

Full-text documents assessed for eligibility (n=362)

Record excluded by Limited to Journal Type and Document Type Article (n=148)

Include

Studies included in the analysis (n=214)

Figure 2. PRISMA chart for literature search and filtering
Source: Adapted from Haddaway et al. (2022). generated thought Power Point

Data search and processing strategies

The literature search was conducted using a structured query in the Scopus database: (TITLE-ABS-KEY ("Higher Education" OR "University" OR "Institute" OR "Academy") AND TITLE-ABS-KEY ("Muhammadiyah" OR "Aisyiyah" OR "Ahmad Dahlan")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (DOCTYPE, "ar")). This strategy targeted peer-reviewed journal articles addressing governance and innovation within Muhammadiyah Higher Education Institutions. A total of 214 relevant documents were retrieved and exported to Microsoft Excel for metadata processing, including title, abstract, keyword, and publication year analysis. The selection and refinement process adhered to PRISMA 2020 guidelines (Haddaway et al., 2022), ensuring methodological transparency and alignment with the study's objective to map thematic trends and conceptual developments that inform institutional competitiveness strategies.

Data analysis and visualization

This study conducted a bibliometric analysis of 214 selected documents to explore thematic trends and conceptual evolution in governance and innovation within Muhammadiyah Higher Education Institutions. Using RStudio-Biblioshiny, the data were processed to generate visualizations of literature networks, keyword co-occurrence, and thematic clusters, enabling the identification of dominant and emerging research patterns (Jabbar et al., 2024). The tool also facilitated advanced statistical analysis and trend mapping, providing a structured overview of interrelated topics such as leadership models, digital transformation, and organizational commitment. This analytical approach ensured the integration of theoretical insights with practical relevance, offering empirical evidence to support strategic decision-making and institutional development across Muhammadiyah universities.

RESULTS AND DISCUSSION

Trends Topics of Governance and Innovation in Muhammadiyah Higher Education Institutions

Studies on governance and innovation in Muhammadiyah Higher Education Institutions continue to undergo thematic developments that reflect responses to the dynamics of higher education in the digital and globalization era. Research in this field covers various approaches, ranging from strengthening quality management systems, value-based leadership transformation, to the integration of technology in academic and administrative processes. The topics addressed in the literature highlight the interconnection between institutional policies, academic community participation, and adaptation to external challenges.

Figure 3. WordCloud of Topics
Source: Data processing using RStudio-Biblioshiny, 2025

Figure 3 shows that the main focus of research on governance and innovation at Muhammadiyah Universities in the last decade has been heavily concentrated on the local and institutional context. Keywords such as "Indonesia," "Muhammadiyah," "Higher Education," and "Student" appear prominently in the WordCloud, indicating a high frequency of occurrence in the analyzed publications (Shodiq et al., 2019; Wekke et al., 2019). This suggests that the literature review places significant emphasis on the role of institutions rooted in Islamic values and the contributions of students within institutional dynamics. The appearance of the word "Indonesia" as the earliest term (Q1: 2014) shows that national issues have long been a concern, while "Muhammadiyah" and "Higher Education" have more recent publication medians (2019 and 2021), reflecting increased relevance in contemporary academic contexts.

Additionally, keywords such as "Social Media," "Organizational Commitment," and "Education" indicate research directions that integrate digital, psychological, and pedagogical aspects into campus innovation strategies (Kazemian & Grant, 2020; Shanks & Young, 2019). The visual size of these words in the WordCloud reflects the intensity of attention toward these topics, while also supporting an initial mapping of emerging literature trends. The diverse and interconnected patterns of keyword emergence indicate that governance and innovation at Muhammadiyah Universities have developed multidimensionally—involving policy, technology, student participation, and organizational values.

Table 1. Trend Topics

Topics	Frequency	Year (Q1)	Year (Median)	Year (Q3)
Indonesia	10	2014	2018	2021
Muhammadiyah	10	2019	2019	2022
Higher Education	8	2018	2021	2024
Student	6	2016	2020	2021
Social Media	5	2016	2018	2020
Organizational Commitment	5	2017	2019	2022
Education	5	2020	2022	2024

Table 1 shows that the research topic trend on governance and innovation at Muhammadiyah Universities has experienced significant temporal development between 2014 and 2024. The topics "Indonesia" and "Muhammadiyah" have the highest frequencies (10 each), with median publication years of 2018 and 2019, indicating that focus on national and institutional contexts has been a primary concern since the mid-2010s (Nashir et al., 2019). Meanwhile, the topics "Higher Education" and "Education" show a more recent trend, with Q3 in 2024, reflecting increased relevance in contemporary academic literature (Ansyah et al., 2024).

Topics such as "Student," "Social Media," and "Organizational Commitment" appear consistently in the 2016–2022 timeframe, indicating a shift in focus toward student participation, digitalization, and strengthening organizational values (Syamsudin et al., 2019). The time distribution presented in quartiles (Q1, Median, Q3) provides a clear picture of the dynamics of thematic evolution, while also showing that research is not only growing quantitatively but also diversifying in terms of issues, reflecting the challenges and needs of Muhammadiyah institutions in navigating the era of higher education transformation.

Table 2. Top 9 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	End	2011 - 2024
Indonesia	2013	0.95	2016	
Accounting Information Quality	2015	0.89	2017	
Social Media	2015	0.71	2018	
Listening Comprehension	2016	0.85	2018	
Instructional Model	2016	0.85	2018	
Affective Commitment	2016	0.64	2019	
Classroom Management	2018	1.22	2020	
Communication Strategies	2019	0.99	2020	
Employee Performance	2021	1.05	2022	

Table 2 shows that a number of keywords experienced significant citation bursts in the period 2011–2024, reflecting increased academic attention to certain issues in governance and innovation at Muhammadiyah Universities. The keyword "Indonesia" had the highest initial burst strength (0.95) in 2013–2016, indicating that the national context was the primary focus in early literature. Meanwhile, "Classroom Management" (2018–2020) and "Employee Performance" (2021–2022) showed higher burst strengths

(1.22 and 1.05), indicating that issues related to learning management and human resource performance have become increasingly relevant in current academic discourse (Siswosuharjo & Listiyoko, 2019).

Additionally, keywords such as "Accounting Information Quality," "Social Media," and "Instructional Model" experienced bursts between 2015–2018, reflecting the integration of technology and pedagogical approaches in institutional innovation (Qorib & Umiarso, 2025). Although "Affective Commitment" and "Communication Strategies" have lower burst strengths, their emergence remains significant in shaping understanding of organizational dynamics and communication strategies in the campus environment.
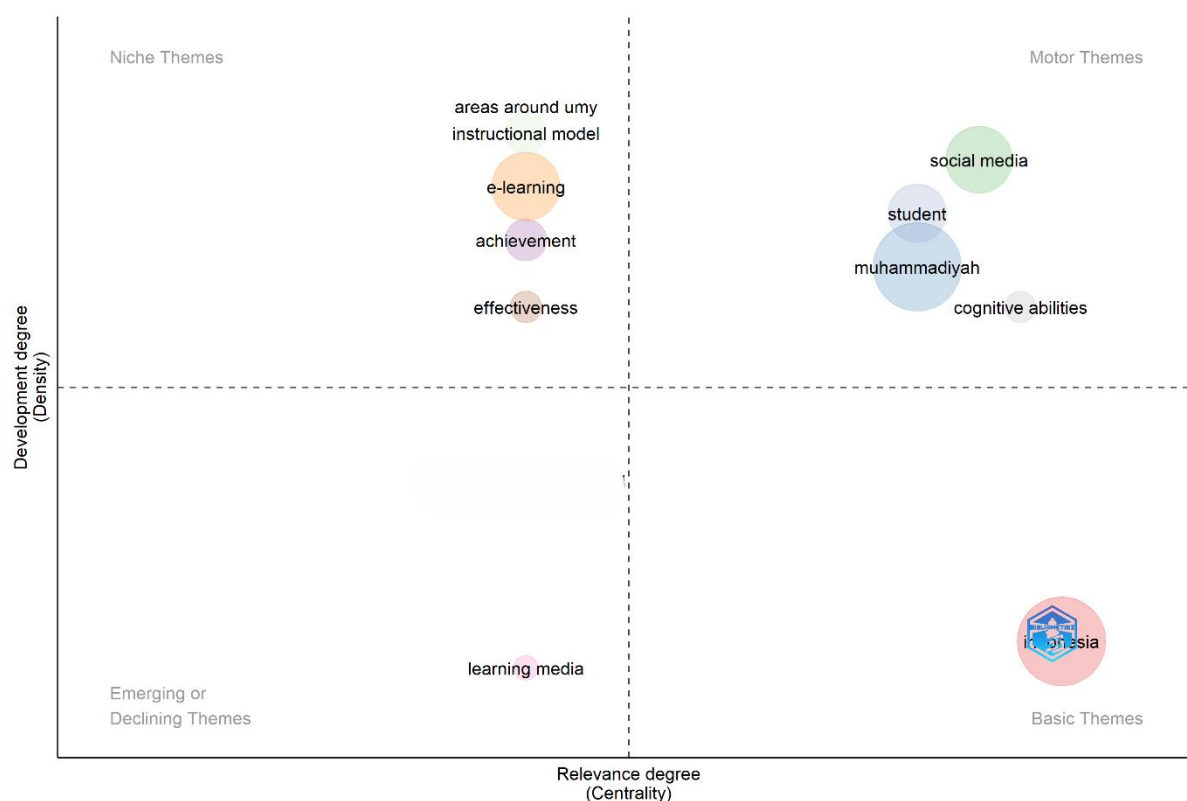

Figure 4. Tematic Map of Topics
Source: Data processing using RStudio-Biblioshiny, 2025

Figure 4 shows that the thematic map successfully groups research topics into four quadrants based on two main dimensions: density and centrality. The upper right quadrant (motor themes) contains topics such as "Higher Education" and "Organizational Commitment," which have a high level of development and strong relevance to the field of study (Syamsudin et al., 2019). This indicates that these themes are the focus of attention in the literature and form a solid conceptual foundation in studies of governance and innovation at Muhammadiyah Universities.

Meanwhile, the upper left quadrant (niche themes) features topics such as "Instructional Model" and "Listening Comprehension," which, although developing intensively, have limited relevance to the main themes (Nur & Syarifuddin, 2018). In the lower right quadrant (basic themes), keywords such as "Indonesia" and "Muhammadiyah" appear, which have high centrality but low density, indicating that

these topics are highly structurally relevant but still require further exploration (Hamami & Nuryana, 2022; Subhan, 2023). The lower left quadrant (emerging or declining themes) shows topics such as "Accounting Information Quality" and "Affective Commitment," which are in the early stages of development or beginning to decline in attention (Arifin et al., 2022; Qodir et al., 2020, 2021).

Evolution Topics of Governance and Innovation in Muhammadiyah Higher Education Institutions

The development of governance and innovation at Muhammadiyah Universities shows a dynamic that continues to change in line with the demands of the times and the transformation of higher education in Indonesia. This evolution reflects a paradigm shift from a traditional approach to a more adaptive, technology-based, and participatory model. In the context of institutions rooted in Islamic values, these changes involve adjustments to organizational structures, leadership strategies, and the integration of academic policies with modern governance principles.
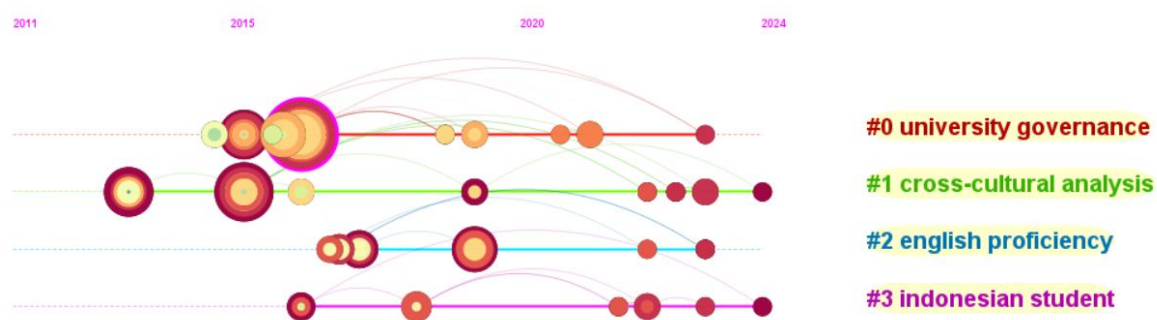

Figure 5. Time line View of Topics
Source: Data processing using CiteSpace, 2025

Figure 5 shows that the evolution of research topics on governance and innovation at Muhammadiyah Universities has been dynamic throughout the period 2011–2024. Through the timeline visualization, it can be seen that the topics "Indonesia" and "Muhammadiyah" emerged earlier and persisted longer, indicating consistent attention to the national and institutional contexts as the primary foundation of the studies (Ahmad et al., 2019; Nashir et al., 2019). Meanwhile, topics such as "Higher Education," "Education," and "Organizational Commitment" began to gain strength in the middle of the decade and continued to develop until the final years, reflecting a shift in focus toward improving institutional quality and organizational competitiveness (Hamami, 2021).

Other topics such as "Social Media," "Instructional Model," and "Employee Performance" exhibit more episodic patterns of emergence but remain relevant in addressing the challenges of digitalization and learning transformation (Hariyadi et al., 2021). This figure also reveals that some topics experienced spikes in attention during specific periods, which may be linked to policy changes, technological developments, or strategic needs of Muhammadiyah institutions.

Best Practices in Governance Structures and Practices in Various Muhammadiyah Higher Education Institutions

Governance at Muhammadiyah universities in Indonesia demonstrates the implementation of best practices that integrate Islamic values, principles of transparency, and a quality management approach in institutional management. Several universities apply Total Quality Management (TQM) and Muhammadiyah's distinctive leadership style to enhance organizational competitiveness and effectiveness. On the other hand, principles of Good University Governance such as accountability, efficiency, and participation serve as the foundation for building an adaptive and sustainable governance system. Cross-unit academic collaboration, the use of digital technology in administrative and evaluation systems, and the strengthening of an organization culture rooted in spiritual values further reinforce institutional structures.

Table 3. Governance Structures and Practices in Various Muhammadiyah Higher Education Institutions in Indonesia

Universities	Higher Education Governance	Sources
Muhammadiyah University of Yogyakarta	• Implementation of Total Quality Management (TQM) to enhance competitive advantage. • Emphasis on Muhammadiyah Leadership Style for organizational success.	(Bidayati et al., 2023)
Ahmad Dahlan University	• Adoption of Muhammadiyah Leadership Style and TQM to improve competitive advantage. • Focus on leadership styles tailored to the university's unique needs.	(Bidayati et al., 2023)
'Aisyiyah Yogyakarta University	• Utilizes Muhammadiyah Leadership Style and TQM for competitive advantage. • Leadership styles are adapted to the specific context of the university.	(Bidayati et al., 2023)
Muhammadiyah University of East Kalimantan	• Implementation of 16 principles of Good University Governance, including transparency, fairness, efficiency, and effectiveness. • Challenges in fully optimizing principles like independence and accountability.	(Rahayu et al., 2018)
General Muhammadiyah Aisyiyah Universities	• Positive impact of Knowledge Management mediated by Good University Governance on university performance. • Emphasis on capacity-building and management accountability.	(Fauziana et al., 2024; Sukrisno, 2020)
Muhammadiyah Universities in Indonesia	• Governance positively affects organizational commitment, particularly affective and continuance commitment. • Emphasis on quality of working responsibility and research as part of worship.	(Syamsudin et al., 2016, 2019)

Table 3 shows that governance practices at various Muhammadiyah universities in Indonesia adopt a value-based approach and quality management principles to improve institutional competitiveness. Muhammadiyah University of Yogyakarta, Ahmad Dahlan University, and 'Aisyiyah University of Yogyakarta implement Muhammadiyah

leadership style and Total Quality Management (TQM) as their primary strategies in building competitive advantage (Bidayati et al., 2023). These three institutions adapt the leadership style to the specific needs of each campus, demonstrating flexibility in the application of organizational values.

Meanwhile, Muhammadiyah University of East Kalimantan implements the 16 principles of Good University Governance, including transparency, efficiency, and effectiveness, but still faces challenges in optimizing the principles of independence and accountability (Rahayu et al., 2018). At a broader institutional level, Muhammadiyah and Aisyiyah universities demonstrate that Knowledge Management mediated by good university governance has a positive impact on institutional performance, with an emphasis on capacity building and managerial accountability (Fauziana et al., 2024; Sukrisno, 2020). Additionally, studies by Syamsudin et al. (2016, 2019) confirm that effective governance contributes to organizational commitment, particularly in affective and sustainability aspects, emphasizing work and research responsibilities as part of religious devotion.

Implications of Various Studies Governance and Innovation in Muhammadiyah Higher Education Institutions

Various studies on governance and innovation in Muhammadiyah Universities have made important contributions to the development of more adaptive, value-based, and globally competitive institutional models. These studies indicate that the implementation of Good University Governance principles, transformational leadership, and the utilization of digital technology hold great potential in driving internationalization and enhancing institutional quality. Additionally, approaches rooted in organizational culture and Islamic spirituality further strengthen institutional identity and foster collective behavior that supports academic and administrative performance.

Table 4. Top Five Articles based on Topic Relevance

Authors	Issued Discuss	Insight
(Bidayati et al., 2023)	The Impact of Muhammadiyah' Leadership Style and Total Quality Management on Competitive Advantage in Universities – Case on Universities in Yogyakarta, Indonesia	Muhammadiyah's leadership style has a positive influence, both directly and indirectly through the implementation of Total Quality Management (TQM), on improving the competitive advantage of Muhammadiyah Aisyiyah Higher Education Institutions (PTMA). TQM has proven to be effective in promoting the competitiveness of higher education institutions in Yogyakarta.
(Hanny & Rizal, 2020)	Hidden curriculum: The concept of integrating islamic value in higher education accounting at muhammadiyah on ulab albab perspective	The integration of Islamic values in Accounting Education at Muhammadiyah Aisyiyah Higher Education Institutions (PTMA) is carried out through the concept of Hidden Curriculum, which includes spiritual practices such as prayer, zikir, tafakkur, ikhtiar, and tawakal. This approach aims to develop students who are

Authors	Issued Discuss	Insight
		religious and have Muhammadiyah character in a holistic manner.
(Gunawan & Firdaus, 2020)	Promoting university of Muhammadiyah tangerang students in holmesglen multicultural English plus class Melbourne: The use of communicative in excursion and E-learning	The short course English program at Holmesglen Institute, Melbourne, attended by students from the University of Muhammadiyah Tangerang, effectively improves English language skills through communicative strategies, e-learning, and extracurricular activities, in order to prepare competent human resources to face global competition.
(Jafri et al., 2024)	The influence of organizational culture, competence and professionalism on innovative behavior, job satisfaction and performance moderated by the spiritual intelligence of Muhammadiyah university lecturers in East Kalimantan	Organizational culture, competence, and professionalism have a positive effect on the performance of lecturers at Muhammadiyah University of East Kalimantan. However, spiritual intelligence does not have a significant impact as a moderating variable between innovative behavior and lecturer performance in the context of the Tri Dharma of Higher Education.
(Nuryanto & Pambuko, 2019)	A study on the effect of human resource empowerment on productivity: Evidence from Indonesian higher education	Human resource empowerment through information technology, cultural dimensions, and organizational knowledge significantly improves the productivity of Muhammadiyah universities in Indonesia. These three dimensions contribute positively, although the combined effects of human resource empowerment have not been thoroughly analyzed.

Table 4 shows that the top five articles based on topic relevance contribute significantly to understanding governance strategies and innovation at Muhammadiyah universities. The study by Bidayati et al. (2023) highlights the positive influence of Muhammadiyah's leadership style and the implementation of Total Quality Management (TQM) on institutional competitive advantage in Yogyakarta, emphasizing that the combination of values and quality systems can enhance university competitiveness. Meanwhile, Hanny & Rizal (2020) examine the integration of Islamic values through the hidden curriculum in accounting education, aiming to develop students' character holistically.

Gunawan & Firdaus (2020) show the effectiveness of communicative strategies and e-learning in improving the English language competence of Muhammadiyah Tangerang students through an international program in Melbourne, highlighting the importance of a global approach in human resource development. Jafri et al. (2024) revealed that organizational culture, competence, and professionalism positively influence faculty performance, although spiritual intelligence is not significant as a moderating variable. Finally, Nuryanto & Pambuko (2019) emphasized that human resource empowerment

through information technology, cultural dimensions, and organizational knowledge contributes to institutional productivity improvement.

Table 5. Top Five Articles Based on Citations

Authors	Issued Discuss	Insight	Citation
(Indarti et al., 2017)	The effect of OCB in relationship between personality, organizational commitment and job satisfaction on performance	Organizational citizenship behavior mediates the influence of personality, organizational commitment, and job satisfaction on lecturer performance at the University of Muhammadiyah Makassar. These findings emphasize the importance of strengthening organizational citizenship values in improving lecturer performance in Muhammadiyah higher education institutions.	114
(Rahardjanto et al., 2019)	Hybrid-PjBL: Learning outcomes, creative thinking skills, and learning motivation of preservice teacher	The implementation of the Hybrid-PjBL learning model significantly improved the learning outcomes and creative thinking skills of Biology Education students at the University of Muhammadiyah Malang and was relevant to the demands of 21st-century learning as an innovative approach that encourages motivation and higher-order thinking skills.	60
(Pantiwati & Husamah, 2017)	Self and peer assessments in active learning model to increase metacognitive awareness and cognitive abilities	The application of self-assessment and peer assessment in active learning at the University of Muhammadiyah Malang significantly improves students' metacognitive awareness and cognitive abilities. Cognitive knowledge and regulation contribute directly to increased metacognitive awareness and cognitive achievement in science learning.	55
(Irwanto et al., 2019)	Using inquiry-based laboratory instruction to improve critical thinking and scientific process skills among preservice elementary teachers	The Inquiry-Based Laboratory Instruction (IBLI) approach significantly improves the critical thinking and scientific process skills of prospective elementary school teachers at the University of Muhammadiyah Ponorogo compared to traditional laboratory	38

Authors	Issued Discuss	Insight	Citation
		methods, making IBLI an effective strategy in 21st-century science education.	
(Burhani, 2014)	Treating minorities with fatwas: A study of the Ahmadiyya community in Indonesia	Fatwas issued by Islamic institutions such as the Indonesian Ulema Council (MUI), Muhammadiyah, and others against Ahmadiyya aim to preserve orthodoxy among Muslims. Although Ahmadiyya practices its religion devoutly, it is still considered theologically deviant and accused of apostasy under Islamic law.	35

Table 5 shows that the five articles with the highest number of citations provide a strong theoretical and empirical foundation in the study of governance, learning, and performance at Muhammadiyah Universities. The article by Indarti et al. (2017), with 114 citations, highlights the mediating role of Organizational Citizenship Behavior (OCB) in the relationship between personality, organizational commitment, and job satisfaction on faculty performance, emphasizing the importance of collective values in enhancing institutional performance. Rahardjanto et al. (2019) show that the Hybrid-PjBL learning model significantly improves student learning outcomes and creative thinking skills, which are relevant to the demands of 21st-century learning (60 citations).

Pantiwati & Husamah (2017) reveal that the application of self-assessment and peer assessment in active learning can enhance students' metacognitive awareness and cognitive abilities (55 citations), reinforcing a reflective approach in education. Irwanto et al. (2019) emphasized the effectiveness of the Inquiry-Based Laboratory Instruction (IBLI) method in improving the critical thinking skills and scientific processes of prospective elementary school teachers (38 citations), showing the importance of pedagogical innovation. Meanwhile, Burhani (2014) discusses the position of Ahmadiyah in the context of religious fatwas, with 35 citations, providing a relevant socio-political perspective on the dynamics of diversity within Islamic institutions.

CONCLUSION

This study successfully mapped the thematic dynamics and conceptual evolution in governance and innovation studies at Muhammadiyah University through a bibliometric approach based on Scopus data. Analysis of 214 documents revealed that themes such as "Higher Education," "Muhammadiyah," and "Organizational Commitment" form the core foundation of the literature, while topics like "Social Media," "Student," and "Education" reflect new directions toward digitalization and academic participation. Visualizations through WordCloud, citation bursts, and thematic mapping reveal that governance and innovation at Muhammadiyah University are multidimensional, encompassing institutional policies, information technology, organizational culture, and integrated spiritual values.

The implications of these findings are highly relevant for the development of evidence-based institutional strategies, particularly in responding to the challenges of globalization and disruption in higher education. Theoretically, this study expands understanding of Islamic value-based governance and institutional innovation; practically, the results can be utilized by Muhammadiyah University leadership and the Muhammadiyah Higher Education, Research, and Development Council in designing adaptive and sustainable policies. The general claim supported by evidence is that the integration of Good University Governance principles, Muhammadiyah-specific leadership, and digital technology can enhance institutional competitiveness. Moving forward, this bibliometric approach can be expanded to explore more inclusive, collaborative, and responsive governance models in response to social and technological changes.

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