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A Multi-Criteria Decision-Making Framework for Evaluating Government Institutional Performance: The Role of Corporate Citizenship in Hajj Fund Ecosystems

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ABSTRACT

This study explores the influence of corporate citizenship—defined as an organisation's responsibility to adhere to legal obligations and meet societal expectations—on the performance of public sector institutions. The investigation considers the mediating roles of knowledge mobility, innovation appropriability management, network stability, and the development of innovation value propositions. A quantitative approach is employed, utilising Multi-Criteria Decision-Making (MCDM) techniques to prioritise the critical success factors impacting institutional performance within the Hajj fund management ecosystem. Data were obtained through a structured questionnaire administered to 81 respondents involved in Indonesia's Hajj fund management, encompassing decision-makers from Islamic financial institutions, zakat agencies, and associated investment stakeholders. The data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). To strengthen the decision-making framework, the study integrates the Analytic Hierarchy Process (AHP) as an MCDM instrument to assess and rank the components of corporate citizenship—namely legal, ethical, discretionary, and economic dimensions—against ecosystem orchestration variables, including knowledge mobility, network stability, and innovation value propositions. The findings underscore that the effectiveness of corporate citizenship is substantially linked to the performance of public institutions, primarily through its impact on knowledge mobility and innovation value creation. The results suggest that corporate citizenship, understood as both organisational conduct and practice, along with knowledge mobility, may serve as pivotal drivers of institutional performance, particularly within the domains of corporate governance and public sector administration. The application of MCDM offers a robust, evidence-based mechanism to guide strategic decisions related to resource allocation, innovation initiatives, and integrated stakeholder coordination within public sector ecosystems that prioritise non-profit objectives. As a quantitative inquiry, the research aims to elucidate the determinants of institutional performance in government settings. Future studies may enrich these insights through qualitative methodologies, such as interviews

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or case study analyses. Additionally, the exploration of combined decision-support systems (DSS) incorporating MCDM frameworks may prove valuable when applied to ecosystem governance in broader public sector environments. This research makes several novel contributions to both theory and practice. It provides empirical evidence supporting the application of the ecosystem orchestration model in a government context, specifically within the management of Hajj funds in accordance with Sharia principles. The study posits that implementing such a model, where a central entity exerts normative influence over a diverse array of institutional partners, is grounded in practical application. Furthermore, the model accommodates a hybrid structure involving both profit-oriented and non-profit actors. The originality of the research is also evident in its use of quantitative decision modelling, specifically through MCDM-based DSSs, which enable structured, sequential, and evidence-driven decision-making processes aimed at improving institutional performance within complex, multi-stakeholder public sector ecosystems. To the authors' knowledge, this represents the first scholarly examination of the link between corporate citizenship and public institutional performance through the lens of MCDM models and DSSs.

1. Introduction

1.1 Background

Hajj, recognised as one of the five fundamental obligations in Islam Preko et al. [38], holds profound religious and economic relevance for Muslims globally [6]. It is incumbent upon every Muslim who possesses the physical and financial means to perform this pilgrimage at least once during their lifetime [13; 22]. The pilgrimage generates extensive economic activity, encompassing expenditures related to travel, lodging, and auxiliary services, thereby influencing the economies of both the pilgrims' countries of origin and Saudi Arabia [21]. Owing to the substantial scale of these financial movements, it is essential that the administration of Hajj-related funds be conducted in strict accordance with Sharia principles, which advocate justice, fairness in resource allocation, and the promotion of societal well-being. To manage the influx of pilgrims, Saudi authorities implement a quota system proportional to each nation's Muslim population. For instance, Indonesia's quota rose from 100,051 pilgrims in 2022 to 221,000 in 2023. On a global scale, the count of international pilgrims excluding Saudi nationals increased from 773,324 in 2022 to 1,371,520 in 2023 (refer to Table 1). In financial terms, Hajj activities contributed an estimated \$12 billion to the Saudi economy, accounting for approximately 7 percent of its gross domestic product.

Table 1

Hajj Pilgrims Quota by Country

Country/Year	2023	2022
Indonesia	221,000	100,051
Pakistan	180,000	81,132
India	175,025	79,237
Bangladesh	127,198	57,585
Nigeria	95,000	43,008
All Countries	1,371,520	773,324

Source: <https://worldpopulationreview.com/country-rankings/hajj-quota-by-country>

Since 2017, the management of Hajj funds in Indonesia has been overseen by the Hajj Funds Management Agency (BPKH), which was formally established under Law No. 34/2014 and Presidential Regulation No. 110/2017, succeeding the Ministry of Religious Affairs in this function. The inception of BPKH marked a pivotal transformation in fund governance, fostering collaboration with financial entities, leveraging technological advancements, and ensuring compliance with rigorous regulatory standards. Comparable frameworks are evident in other Muslim-majority nations, including

Malaysia's Tabung Haji and Brunei's Tabung Amanah Islam (TAiB). Nonetheless, maintaining the sustainability and operational effectiveness of such systems remains challenging, especially within environments where both commercial and non-profit actors operate concurrently. Accordingly, it is imperative to explore the distinctive features of institutional ecosystems within government frameworks, with particular attention to BPKH and its function within Indonesia's Hajj finance landscape. This study seeks to address existing gaps in the academic domain by investigating how ecosystem orchestration contributes to institutional outcomes within government-led, non-profit financial ecosystems.

The role of coordination is integral to evaluating ecosystem efficacy across both profit-driven and non-profit settings, as documented in organisational research literature [3; 48]. In the context of non-profit systems, performance is often interpreted through theoretical lenses such as social contract and social exchange theory, which are deemed more applicable than financial metrics [4]. However, effective ecosystem functioning, regardless of its nature, generally necessitates a central coordinating entity to manage strategic planning and implementation [19]. Within public institutions, the overarching mission has traditionally prioritised service delivery, a view reinforced by the multifaceted nature of public perception and societal expectations [27; 30; 35]. Corporate citizenship, defined by an entity's responsibility to uphold legal standards and meet societal demands, becomes a significant factor in this regard [25]. Exploring the link between corporate citizenship and the performance of government-led ecosystems offers a meaningful contribution to the existing body of knowledge, particularly in bridging theoretical and practical understandings. Yet, research has not sufficiently addressed the variables that underpin successful coordination among public sector ecosystems involved in Hajj administration in Muslim-majority regions.

In response to this scholarly gap, the present study introduces an MCDM methodology, with particular emphasis on the AHP, to systematically evaluate and prioritise the elements of corporate citizenship and the success factors influencing Hajj institutional performance. AHP, a well-established method in the decision sciences Wind and Saaty [50], provides a structured mechanism for ranking the relative importance of legal, ethical, discretionary, and economic dimensions of corporate citizenship, especially within the regulatory context of non-profit bodies like BPKH. Additionally, AHP enables the appraisal of ecosystem orchestration variables, such as knowledge mobility, network stability, and innovation value propositions, by incorporating expert judgement and stakeholder input. This methodological approach enhances both the scientific rigour and the applicability of the study's findings for decision-makers and institutional strategists.

Building upon the theoretical model presented in Dhanaraj and Parkhe [19], this research concentrates on orchestrating ecosystem elements, particularly knowledge transfer dynamics, the durability of inter-organisational networks, and strategies to manage innovation appropriation. The study identifies key determinants that influence the functioning of government ecosystems, a topic that has received limited scholarly attention to date, while also demonstrating the value of strategic governance in improving institutional outcomes. Furthermore, the analysis encompasses both business-oriented and public-sector ecosystems, underlining the distinctive emphasis of non-profit missions within governmental settings, and investigates how corporate citizenship and coordination processes jointly influence institutional effectiveness. The Hajj fund ecosystem, as embodied by BPKH, is used as an illustrative case. BPKH represents one of the few government entities mandated to generate "benefit value," which refers to investment returns that enhance the welfare of Hajj pilgrims or the broader Muslim community. Its role extends beyond achieving adequate financial yields to subsidise pilgrimage costs; it also involves establishing governance standards for managing ecosystem participants. Like private enterprises, BPKH must incorporate innovation practices to safeguard the sustainability of the Hajj funds under its stewardship. Given this context, the study aims

to examine how corporate citizenship informs performance in government institutions by means of ecosystem orchestration.

RQ: How does corporate citizenship influence decision-making and subsequently affect government institutional performance through ecosystem orchestration?

2. Hypotheses Development

This research introduces a conceptual model illustrating how orchestration functions within an innovation-oriented network, drawing upon the framework articulated in [19]. The model serves to clarify how coordination and governance mechanisms operate within a network of government agencies structured as a solution ecosystem with innovation as its core objective. In such ecosystems, a central institution assumes the responsibility of aligning and managing the actions of other participants to facilitate seamless innovation processes and improve overall ecosystem performance [19]. Unlike commercial entities, government institutions demonstrate a distinct structural ecology rooted in their non-profit orientation and intrinsic operational characteristics [29; 51]. In contrast to profit-driven business ecosystems, public sector organisations lack financial motives as a foundational driver [15; 16]. This investigation examines the extent to which profit expectations may inhibit the full engagement of stakeholders within such ecosystems. It considers the possibility that not all actors may fully grasp the fundamental goals of the government-led ecosystem. The focal institution in this configuration performs a fundamentally different role compared to the other ecosystem participants, especially when profit-oriented organisations are involved. The ecosystem, anchored by a non-profit government entity, entails a more complex configuration that demands attention beyond the three antecedents outlined in [19].

In addition to these antecedents, corporate citizenship must be highlighted for its significant influence on coordination dynamics. Grounded in social contract and social exchange theoretical perspectives, public institutions are fundamentally mandated to serve the public interest and promote social well-being [32], thereby justifying the integration of corporate citizenship as a vital construct. Private organisations that align with the mission of the focal public institution are better positioned to support its objectives. Conversely, entities that lack an appreciation for the primary goals of the core government agency may be less effective in contributing to coherent orchestration within the ecosystem [37]. In this context, the inclusion of non-governmental actors within the system may aid in promoting greater alignment with public institutional aims [17; 33; 42].

Adopting a civic republican or communitarian outlook, corporations may see themselves as stewards acting on behalf of diverse stakeholders [43], with corporate citizenship embodying this inclusive orientation [9]. Emphasising this construct enhances mutual understanding between private actors and central government bodies, thereby reinforcing the collaborative potential of the ecosystem [11]. Organisations demonstrating a stronger commitment to corporate citizenship are more likely to support and enhance the operational success of public institutional ecosystems, fostering symbiotic partnerships. In this study, BPKH is positioned as the principal coordinating body in the Hajj financial ecosystem. As one of the few public sector agencies with a mandate to generate "value benefits" through investment returns that support the well-being of Hajj pilgrims, BPKH is tasked not only with achieving adequate returns but also with establishing governance structures for participating ecosystem entities. The adoption of innovative strategies is essential for maintaining the long-term financial viability of the Hajj funds under BPKH's stewardship.

The overall performance of such government agencies is closely linked to their non-profit mandate and the degree to which corporate citizenship is integrated into operational practice. Public institutions are established with the overarching purpose of enhancing community welfare Dalen [18], and their effectiveness is assessed through their capacity to deliver innovative solutions that

advance this mission. Social exchange theory posits that public institutions must foster cooperative relationships with the broader community to succeed in their societal roles [28]. Evaluating public sector organisations therefore requires an examination of how effectively they design and implement strategies aligned with social goals, including adherence to regulations, collaborative engagement, and coherence with government mandates. The framework proposed in Dhanaraj and Parkhe [19], in conjunction with insights from recent scholarly contributions, facilitates the development of a robust model for assessing the performance drivers within government institutional ecosystems. Prior investigations, including those in Guo et al. [24], have identified a positive correlation between institutional performance and the innovative value proposition. Nevertheless, further empirical exploration is needed to better understand how this relationship functions within the context of non-profit public institutions. This study contributes a theoretical model, derived from the reviewed literature, depicted in Figure 1. The model demonstrates how corporate citizenship, and the innovation value proposition jointly influence the performance of government institutions through mediating variables such as knowledge transfer, strategic innovation management, and the evolution of network stability.

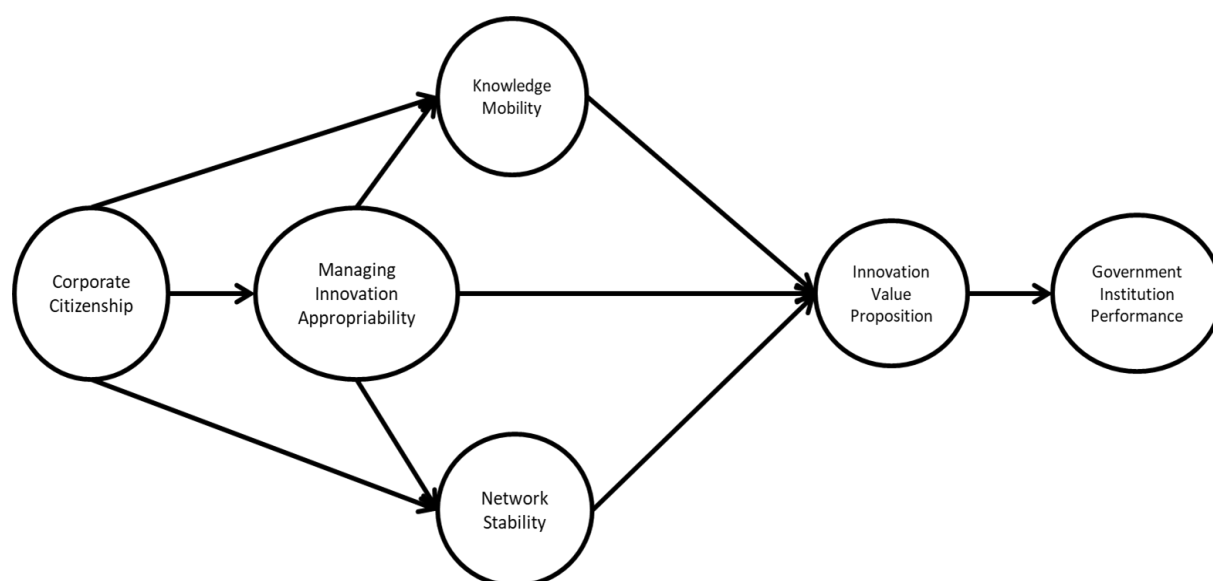


Fig.1: Empirical Model

The contribution of knowledge mobility to institutional performance has been underscored in the research conducted by Truong et al. [46], which identifies it as a pivotal element in enhancing the capabilities of market-based institutions. Moreover, the findings in Soomro and Soomro [44] point to innovation as a key mechanism through which organisations can raise their market competitiveness and improve operational outcomes. In contrast, Abukhait et al. [2] stress that responsible organisational management forms the foundation upon which innovation can be cultivated within institutions. As noted in Alshukri et al. [8], when leadership embraces a socially responsible orientation, the institution becomes more adept at maintaining its market relevance over time. The analysis in Gu et al. [23] further demonstrates that the strategic prioritisation of CSR has a considerable effect on institutional effectiveness, shaping the trajectory of business management within public and private sector structures. In addition, Alshukri et al. [8] contend that corporate citizenship plays a vital role in enabling knowledge transfer and fostering innovation across organisational processes. Drawing from these collective insights, the following hypothesis is proposed:

H1: Corporate citizenship positively influences government institutional performance by mediating the knowledge mobility and innovation value proposition variables.

Effective innovation management constitutes a fundamental requirement for ensuring an organisation's long-term viability [34]. In institutions driven by productivity objectives, it is imperative to establish well-defined and strategically aligned management goals to strengthen performance outcomes [36]. According to Duah et al. [20], the governance of innovation processes significantly shapes institutional effectiveness, serving as a critical determinant of performance. Furthermore, Zayed et al. [52] argue that the integration of corporate governance principles with the ethos of corporate citizenship is indispensable for enhancing the performance of public sector organisations. The emphasis on innovation orientation, along with the dissemination of coherent value propositions, is identified by [12] as a key driver in improving institutional performance. Additionally, Chen [14] asserts that performance outcomes are maximised when available resources are managed responsibly through the principles of corporate citizenship and the effective administration of innovation. Informed by these insights, the following hypothesis is formulated:

H2: Corporate citizenship positively influences government institutional performance by mediating variables of managing innovation appropriability and value propositions.

The importance of networking in organisational operations is underscored in the study by Sreenu [45], which identifies it as a foundational element for institutional functionality. Building institutional networks facilitates the adoption and governance of innovative business practices, which can, in turn, promote the development of corporate citizenship values [10]. According to Aamir et al. [1], institutional performance is positively influenced when innovation is integrated with managerial strategies that reflect sustainability objectives. Moreover, Ali et al. [5] propose a differentiated managerial approach, wherein senior leadership is expected to concentrate on advancing corporate citizenship, while mid-level managers are encouraged to prioritise the creation and dissemination of innovation-driven value. This innovation-oriented value contributes not only to organisational growth but also aligns with broader governmental goals focused on sustainable development [31]. Drawing on these perspectives, the following hypothesis is proposed:

H3: Corporate citizenship positively influences government institutional performance by mediating network stability and innovation value proposition.

Effective innovation management is widely recognised as a vital mechanism for ensuring organisational success [39]. Institutions that place emphasis on corporate social responsibility are often better positioned to enhance their overall performance [7]. As noted by Bokhari and Myeong [12], innovation processes, alongside the strategic distribution of essential knowledge among personnel, play a central role in strengthening institutional outcomes. Similarly, Gu et al. [23] contend that fostering corporate citizenship is essential for sustaining knowledge exchange practices grounded in innovation. In addition, Bilal et al. [10] suggest that promoting knowledge sharing within the workforce can generate innovation-oriented value, wherein novel frameworks are established to advance sustainable organisational practices. In view of this discussion, the following hypothesis is proposed:

H4: Corporate citizenship positively and significantly impacts government institutional performance by mediating variables of managing innovation appropriability in knowledge mobility and the innovation value proposition.

According to Alshukri et al. [8], institutional performance is significantly influenced by the presence of robust networking practices. Through networking, organisations are able to facilitate effective knowledge exchange and foster innovation in a structured and constructive manner [20]. When institutional networks are strong, employees are better equipped to address complex management challenges [36]. In contrast, Sreenu [45] observed that institutions with limited networking opportunities often encounter obstacles in managing innovation processes effectively. To overcome these limitations, [5] recommend that organisations promote innovation-related knowledge sharing through well-established networks to support performance outcomes. Additionally, [52] assert that enhanced inter-institutional networking contributes meaningfully to the

improvement of institutional effectiveness. Based on this discussion, the following hypothesis is proposed:

H5: Corporate citizenship, through the mediating variables of innovation appropriability, network stability, and the innovation value proposition, has a positive and significant effect on government performance.

3. Methods

To address the aims of this research, primary data were obtained from a total of 81 participants comprising executives and senior managers associated with Islamic financial institutions, zakat management bodies, and relevant investment partners across Indonesia. The respondents held strategic leadership roles within the top management team (TMT), including commissioners, directors, heads of Sharia business units, and senior managerial positions. The participants' professional tenure varied, with individuals reporting over 10 years of experience, some between 4 and 10 years, and the remainder having served between 1 and 3 years in their respective roles. Table 2 outlines the demographic and professional characteristics of the respondents. The data indicate that 70.37% of the participants were male, while 29.63% were female. The largest proportion of respondents (43.21%) fell within the 40-to 50-year age bracket. Regarding academic qualifications, 51.85% held a bachelor's degree, 38.27% a master's degree, and 8.64% had completed doctoral-level studies. A significant portion (59.26%) occupied senior management positions immediately subordinate to the TMT, and 87.65% reported more than ten years of industry experience. In terms of organisational affiliation, 61.73% of respondents were employed within Islamic banks or Sharia-compliant business units, and 87.65% of the institutions had been in operation for over a decade. Moreover, 87.65% of respondents had maintained a partnership with their organisation for more than three years, and 66.67% indicated that their institutional assets were valued between Rp1 trillion and Rp100 trillion.

Table 2
Respondents' Profiles

Demography		Frequency	Percentage
Gender	Male	57	70.37%
	Female	24	29.63%
Age	20-30 Years	1	1.23%
	30-40 Years	14	51.85%
	40-50 Years	35	38.27%
	Above 50 Years	51	8.64%
	Diploma	1	1.23%
Education	Bachelor's Degree	42	51.85%
	Master's Degree	31	38.27%
	Doctoral Degree	7	8.64%
Position	Senior Managers	48	59.26%
	Top Management	33	40.74%
Years of Service	1-3 Years	4	4.94%
	4-10 Years	6	7.41%
	More than 10 Years	71	87.65%
Institution	Islamic Bank/Unit	50	61.73%
	Investment Management	19	23.46%
	Zakat Institution	12	14.81%
Years of Operation	>10 Years	71	87.65%
	>5-10 Years	6	7.41%
	>1-5 Years	4	4.94%
Years Registered as Partner	>3 Years	71	87.65%
	>1-3 Years	9	11.11%
	Less than or equal to 1 Year	1	1.23%
Total Institutional Assets	>100 Trillion	11	13.58%
	>Rp 1 - 100 Trillion	54	66.67%
	>Rp 100 Billion - 1 Trillion	7	8.64%
	Less than or equal to Rp 100 Billion	9	11.11%

Source: Data Analytics, authors

This research adopts PLS-SEM to test the proposed hypotheses and examine correlations among latent constructs, in conjunction with the AHP, which serves as a MCDM tool. The integration of AHP is justified by its capacity to navigate complex decision environments characterised by conflicting criteria, a scenario commonly encountered in public-sector financial systems such as Indonesia's BPKH. While PLS-SEM is effective for estimating causal relationships between latent variables, it does not provide mechanisms to prioritise decision alternatives or variables in alignment with stakeholder preferences. AHP addresses this limitation by offering a systematic approach for ranking dimensions of corporate citizenship and essential ecosystem components. The combined use of PLS-SEM and AHP enhances the rigour of the study, delivering both empirical evidence and actionable decision-making insights. This dual-method approach is particularly beneficial for improving practical outcomes in resource allocation, innovation governance, and stakeholder coordination within governmental entities.

As noted in Hair et al. [26], PLS-SEM is widely employed to explore complex interrelations between latent and observable variables, especially in exploratory research, predictive analytics, and the development of formative constructs. Its capacity to accommodate non-normally distributed data and operate effectively with small sample sizes underscores its suitability for the present study, making it applicable across diverse fields such as business management, social sciences, and information systems. In SEM, the standard guideline for determining sample size recommends having five to ten times as many participants as there are indicators. With a total of 56 indicators, the covariance-based SEM (CB-SEM) approach would necessitate a sample size ranging from 280 to 560 participants. However, the present study includes only 81 respondents, rendering CB-SEM impractical. Consequently, PLS-SEM was selected due to its aptitude for analysing complex models with limited sample sizes [26]. Furthermore, PLS-SEM is particularly suitable for causal-predictive modelling, as it prioritises the maximisation of explained variance (R^2) over model fit indices, making it robust in contexts where traditional SEM assumptions, such as large samples and multivariate normality, are not fulfilled.

Data were analysed using Smart PLS version 4 [39]. To evaluate construct validity and reliability, the measurement model was assessed using factor loadings, average variance extracted (AVE), and composite reliability (CR). Indicators with loadings below 0.50 were excluded to enhance the validity of the measurement constructs. The structural model was subsequently evaluated through bootstrapping procedures and R^2 values to determine the strength and significance of the hypothesised relationships. The use of bootstrapping with 5,000 subsamples improved the precision of path coefficient estimations, thereby enhancing the reliability and robustness of the hypothesis testing process. In addition, the predictive power of the model was assessed using PLS predict [41], a method designed to evaluate out-of-sample prediction accuracy. This validation ensured the model's practical applicability and statistical reliability. By incorporating PLS predict, the study reinforces the predictive robustness of the PLS-SEM framework, verifying that the established structural relationships remain valid when applied beyond the sample data [26]. This is particularly advantageous in contexts where research outcomes are intended to inform forward-looking decision processes, thereby augmenting the analytical value of the findings.

The evaluation of construct validity and reliability in PLS-SEM was conducted through direct analysis of the latent constructs and their respective indicators, eschewing the parcelling technique commonly used in CB-SEM [26]. Emphasis was placed on internal consistency and convergent validity, using CR and AVE as evaluation criteria. With CR values exceeding 0.70, indicating strong internal reliability, and AVE values surpassing the 0.50 benchmark, suggesting acceptable convergent validity, the results summarized in Tables 3 and 4 confirm that all constructs meet the recommended thresholds [40].

Table 3

First-Order CFA Variables Validation

First Order Variables	CR	AVE
Economic Citizenship	0.91	0.73
Legal Citizenship	0.93	0.75
Ethical Citizenship	0.93	0.87
Discretionary Citizenship	0.93	0.78
Absorptive Capacity / Knowledge Mobility	0.94	0.73
Managing Innovation Appropriability	0.91	0.64
Network Stability	0.93	0.76
Innovation Value Proposition	0.93	0.76
Collaboration (PIC)	0.94	0.68
Compliance (PIE)	0.93	0.73

Source: Data Analytics, authors

These findings demonstrate that the measurement model provides a reliable and valid representation of the latent variables, which is a prerequisite for conducting structural analysis to evaluate the relationships among constructs and their respective effect sizes.

Table 4

Second Order CFA for Corporate Citizenship and Government Institutions Variables

Second Order Variable	CR	AVE
Corporate Citizenship	0.96	0.64
Government Institution Performance	0.95	0.61

Source: Data Analytics, authors

4. Results

Table 5 reports the hypothesis testing results, showing that most paths are statistically significant with p-values below 5%. However, paths 3, 5, and 8 are not supported, as their p-values exceed this threshold. Moreover, the mediating effects of knowledge mobility (KM), managing innovation appropriability (MIA), and network stability (NS) on the relationship between corporate citizenship (CC) and government institution performance (GIP) were analyzed using bootstrapping in PLS-SEM.

Table 5

Coefficient for Direct Path

No	Path	Path Coefficient	P-Values	Results
1	CC → KM	0.34	0.00	Supported, Significant
2	CC → MIA	0.58	0.00	Supported, Significant
3	CC → NS	0.15	0.09	Supported, Not Significant
4	MIA → KM	0.59	0.00	Supported, Significant
5	MIA → IVP	0.19	0.28	Supported, Not Significant
6	MIA → NS	0.66	0.00	Supported, Significant
7	KM → IVP	0.42	0.03	Supported, Significant
8	NS → IVP	0.22	0.14	Supported, Not Significant
9	IVP → GIP	0.82	0.00	Supported, Significant

Source: Data Analytics, authors

Notes: CC: Corporate Citizenship; KM: Knowledge Mobility; MIA: Managing Innovation Appropriability; NS: Network Stability; IVP: Innovation Value Proposition; GIP: Government Institution Performance.

Unlike the Sobel test used in CB-SEM, bootstrapping offers a robust, nonparametric method for assessing mediation by generating confidence intervals for indirect effects. As shown in Table 6, mediation significance was determined using a p-value threshold of < 0.05. Two mediation paths were found significant: H1 (CC → KM → IVP) with a p-value of 0.05, and H4 (CC → MIA → KM → IVP) with

a p-value of 0.03. The remaining paths (H2, H3, H5) were not significant, leading to their rejection.

Table 6

Indirect Relationship

No	Path	Coefficient	P-Values	Results
H1.	CC→KM→IVP	0.14	0.05	Supported, Significant
H2.	CC→MIA→ IVP	0.11	0.34	Supported, Not Significant
H3.	CC→NS→ IVP	0.03	0.34	Supported, Not Significant
H4.	CC→MIA→KM→IVP	0.14	0.03	Supported, Significant
H5.	CC→MIA→NS→IVP	0.08	0.18	Supported, Not Significant

Source: Data Analytics, authors

5. Discussion

The results demonstrate that CC significantly influences KM, MIA, NS, and IVP, with highly significant p-values (CC→KM = 0.00; CC→MIA = 0.00; KM→IVP = 0.03). These associations suggest that CC strengthens knowledge exchange, innovation management, and network resilience, ultimately enhancing innovation capacity and institutional performance. CC also cultivates a favorable environment for KM, which is essential for implementing innovative strategies. Significant mediation effects were identified through KM, notably in the CC→KM→IVP ($p = 0.05$) and CC→MIA→KM→IVP ($p = 0.03$) paths, indicating that KM plays a pivotal role in linking CC to innovation outcomes. Conversely, mediation paths such as CC→MIA→IVP ($p = 0.34$) and CC→MIA→NS→IVP ($p = 0.18$) were not significant, highlighting that MIA alone does not drive innovation outcomes without KM. These findings support previous research Wang et al. [49], indicating that CC promotes employee commitment, innovation, and performance by fostering an innovation-oriented culture. In the case of Indonesia's BPKH, where 87% of respondents represent institutions with over a decade of operation, the results reinforce the strategic importance of integrating CC with KM to enhance institutional performance. This aligns with evidence from Malaysian zakat institutions Tuan Ibrahim et al. [47], which also underscores the significance of CC and KM. Overall, the study shows that leveraging CC through effective KM mechanisms can advance innovation and performance in public-sector institutions.

In non-profit government bodies like BPKH, the integrated model holds key implications for governance and decision-making. By merging PLS-SEM's causal analysis with AHP's prioritization, it offers a robust support tool. This helps leaders identify and allocate resources to critical CC and ecosystem factors that drive performance. Focusing on KM and IVP highlights the need for policies that foster info sharing, collaboration, and innovation in public services. The model supports strategic planning, risk control, and stakeholder engagement through evidence-based insights, enhancing transparency and accountability. This study provides a data-driven model to guide actions, improve governance, and align with social welfare and Sharia goals in public sector management.

6. Conclusion

This study concludes that CC plays a pivotal role in improving government institutional performance by advancing KM and reinforcing the IVP. The results highlight the importance of prioritising information dissemination within agencies like BPKH to promote accountability. A responsive ecosystem should ensure timely access to relevant knowledge, enabling personnel to acquire and apply managerial and technical skills effectively. Public institutions must also support ecosystem actors in accessing and validating data accurately, which is essential for sustaining public trust and enhancing overall institutional outcomes.

7. Implications

This study offers both theoretical and practical contributions to enhancing operational efficiency and strategic decision-making in public-sector financial bodies like Indonesia's BPKH. The integration of CC with KM and IVP forms a solid foundation for optimizing resource use and strengthening governance. Focusing on key success factors, KM, NS, and innovation management—enables public institutions to better align their financial and human resources with strategic goals that support transparency, efficiency, and accountability. The application of MCDM tools such as AHP provides a structured approach to managing competing priorities in complex public ecosystems. AHP can help institutions identify and priorities CC dimensions (legal, ethical, discretionary, and economic), integrating them into initiatives like knowledge-sharing, innovation planning, and partnership development. This structured prioritization can lead to improved economic outcomes and social welfare within non-profit financial ecosystems, all within a robust data governance structure.

A key implication is the potential development of a DSS tailored for public-sector finance, grounded in the study's model linking CC, KM, and IVP. With integrated features for data analytics, stakeholder input, and performance tracking, such a DSS would create a functional MCDM platform. This would support dynamic stakeholder coordination, knowledge dissemination, and innovation, while ensuring compliance with Sharia principles and public service obligations. Ultimately, this research highlights the central role of stakeholder collaboration in institutional performance. Encouraging a CC-based cooperative culture can not only improve organisational outcomes but also build trust and engagement across the ecosystem. Operationally, the proposed model may support conflict resolution, stakeholder mapping, and governance of partnerships. Embedding this MCDM-driven framework into institutional processes can help public agencies build transparent, resilient, and adaptive ecosystems suited to the evolving needs of Hajj fund management and the wider Islamic finance sector.

8. Future Study Recommendations

Building on this study's findings, future research could apply the same methodological framework across various organizations or sectors to assess the generalizability of the results. Exploring alternative mediating or moderating variables may further clarify how CC shapes institutional performance. Qualitative approaches, such as case studies or in-depth interviews, could also provide deeper insight into contextual factors influencing the impact of CC. Pursuing these directions would support the development of a more comprehensive theoretical model and contribute valuable perspectives to this evolving field.

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