Policy Paper

Strategy for Internationalizing Indonesian Higher Education Institutions to Enhance Global Competitiveness

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Abstract

The global competitiveness of Indonesian higher education institutions (HEIs) remains constrained compared to regional peers. This policy paper examines the root causes, strategic priorities, and actionable reforms needed to accelerate HEI internationalization in Indonesia. Employing a mixed-method approach—combining the 5 Whys technique for qualitative root cause analysis and the Analytic Network Process (ANP) for policy prioritization—this study synthesizes evidence from national focus group discussions, expert interviews, and international benchmarking with Singapore, Malaysia, and China. Findings identify three critical barriers: the absence of an integrated national policy framework, restrictive and fragmented academic visa regulations, and insufficient structural incentives for international research collaboration. Among seven policy options, academic visa reform and mid-term funding for collaborative research emerged as the highest priorities. This study makes a novel contribution by integrating root cause diagnostics with quantitative policy prioritization, offering a structured five-strategy roadmap aligned with Indonesia's 2025–2045 development vision to strengthen regulatory, institutional, and fiscal foundations for sustainable higher education internationalization.

Keywords: Internationalization; higher education; policy reform; academic mobility; global competitiveness.

Please cite this article in APA Style as:
Brilyanti, F. A. (2025). Strategy for internationalizing Indonesian higher education institutions to enhance global competitiveness. *The Journal of Indonesia Sustainable Development Planning, Vol 6(2)*, 281-296. https://doi.org/10.46456/jisdep.v6i2.693

1.　Introduction

In the era of globalization and competition in knowledge and innovation, the quality and global competitiveness of higher education have become crucial indicators of a nation's capacity to advance its human capital and technological capabilities. International university rankings, such as the QS World University Rankings (QS WUR) and the Times Higher Education World University Rankings (THE WUR), are widely recognized as global benchmarks in assessing academic reputation, research performance, and international impact of higher education institutions.

Despite various initiatives, Indonesian universities continue to lag regional peers in both QS and THE rankings. In the 2025 QS WUR, Universitas Indonesia (UI) ranks 206th globally, followed by Universitas Gadjah Mada (UGM) at 263rd and Institut Teknologi Bandung (ITB) at 281st. In contrast, the National University of Singapore (NUS) ranks 8th globally, Nanyang Technological University (NTU) 26th, and Universiti Malaya (UM) in Malaysia 65th (QS, 2024). According to THE WUR 2024, UI is placed in the 801–1000 band, while NUS is ranked 19th and UM in the 351–400 range. These rankings highlight a persistent performance gap in higher education quality at both regional and global levels.

The internationalization of higher education refers to the process of integrating international dimensions into teaching, research, and community service functions of higher education institutions. This process encompasses student and staff mobility, international research collaborations, curriculum development with a global perspective, and strategic partnerships between institutions across nations. Kapfudzaruwa (2024) emphasizes that internationalization is not merely an end goal but an evolving process that adapts to changing global and local contexts. Studies by de Wit (2019) highlight diverse motivations—idealism, instrumentalism, and educationalism—while Week (2019) underscores its societal contributions beyond campus boundaries. Zhang (2020) examines the challenges and benefits in Asia, stressing the need for regionally tailored approaches. Liu et al. (2019) further illustrate this through China's 'Double First-Class' initiative aimed at building world-class universities.

Global Assemblage Theory provides a useful lens for understanding the complex configurations that arise from the interaction of global and local elements in shaping higher education. It emphasizes the fluidity of social formations, illustrating how policies, practices, discourses, and technologies converge and reconfigure within specific contexts. Nyaaba et al. (2024) introduce this concept to analyse how global models are adapted locally, while Stein and de Oliveira Andreotti (2017) and Brent Edwards Jr. (2025) explore the implications of power dynamics and cultural contexts. Healey (2018) highlights operational challenges in transnational higher education, and Aydin (2021), along with Lourenço and Paiva (2024), examine how global-local interactions shape international higher education policies. In the Indonesian context, this theoretical perspective helps explain why internationalization initiatives—such as the Indonesian International Student Mobility Awards (IISMA), the World Class Professor (WCP) program, and the Scheme for Academic Mobility and Exchange (SAME)—often operate as isolated policy assemblages, lacking coherent integration into a national strategy.

Internationalization has thus become a strategic imperative for Indonesian higher education, encompassing not only outbound student and faculty mobility but also international research collaboration, high-impact publication output, recruitment of foreign academic staff, and active participation in global academic forums (Kapfudzaruwa, 2024; Tran et al., 2023). Countries like Malaysia and Singapore have institutionalized this agenda through national policies such as Malaysia's MyRA initiative and Singapore's Research, Innovation and Enterprise 2025 strategy (Chin et al., 2019a). Indonesia has launched several relevant programs, yet their fragmented implementation, limited fiscal backing, and absence of structural incentives have constrained their impact on global indicators such as the International Research Network (IRN), international citation rates, and the presence of foreign scholars and students (Kemendikbudristek, 2023c; 2024b).

The Triple Helix Model—describing the dynamic interaction between universities, industry, and government in fostering innovation—offers a strategic framework for understanding and addressing these limitations. In this model, universities act as knowledge producers, industry applies and commercializes that knowledge, and the government formulates supportive policies and regulations (Xing & Marwala, 2017; Ranga & Etzkowitz, 2013). Galvão et al. (2017) demonstrate how such collaboration enhances innovation performance, while Cai and Lattu (2022) highlight its role in advancing national innovation systems. In the Indonesian context, weak Triple Helix synergy explains the lack of coordinated

policy for academic mobility, research funding, and global engagement. Strengthening this synergy is therefore central to the policy analysis in this paper.

Indonesia's long-term development agenda, as outlined in the National Long-Term Development Plan (RPJPN) 2025–2045, identifies enhancing global human capital competitiveness as one of the five national development goals. In this context, higher education internationalization is positioned as a key enabler of social, economic, and technological transformation toward Indonesia Emas 2045 (Indonesia, 2024). This paper addresses the critical question: "How can integrated, cross-sectoral policy reforms in higher education internationalization strengthen Indonesia's global competitiveness in line with the RPJPN 2025–2045?". By situating this inquiry within international benchmarking, stakeholder perspectives, and Analytic Network Process (ANP) prioritization, the paper contributes a policy-oriented framework that links theoretical insights—such as Global Assemblage Theory and the Triple Helix Model—with actionable strategies tailored to Indonesia's context. This policy paper aims to identify root causes, strategic priorities, and actionable policy recommendations to enhance the international competitiveness of Indonesian higher education, in alignment with the RPJPN 2025–2045 vision.

2. Methods

2.1 Approach and Methodology

This study employed a mixed-method approach, integrating exploratory qualitative and descriptive quantitative methods to obtain a comprehensive understanding of issues and policy strategies related to the internationalization of Indonesian higher education. The qualitative component aimed to identify root causes through the 5 Whys technique (Meyers & VanGronigen, 2021; Serrat, 2017; Card, 2017), derived from in-depth interviews and focus group discussions (FGDs) with key stakeholders. This approach is widely used to explore the causal structure of policy problems.

The quantitative component applied the Analytic Network Process (ANP) to determine strategic policy priorities through network modelling, supported by Super-Decisions software (Hisham et al., 2021). These two methods were implemented sequentially (sequential exploratory design), starting with qualitative root cause identification, followed by the quantification of priority weights through expert input and consensus validation. The integration of methods enabled methodological triangulation, ensuring that qualitative insights coherently informed quantitative prioritization.

All data collection and analysis adhered to ethical research principles. Prior to participation, all respondents were provided with an information sheet outlining the study's purpose, procedures, and confidentiality measures. Written informed consent was obtained, and identifying information was anonymized in all datasets to protect participant privacy.

2.2 Data Collection Techniques

Data were collected from both primary and secondary sources.

Primary data consisted of:

a. Results of a national FGD involving 20 participants, comprising university leaders, academics, international program directors, and Indonesian diaspora scholars. The FGD lasted approximately 3 hours, structured into three thematic sessions (policy challenges, institutional practices, and strategic recommendations), and facilitated using a semi-structured protocol to allow both guided discussion and emergent topics.

b. Semi-structured interviews with 15 key informants, including rectors, senior lecturers, government officials, and Indonesian scholars abroad engaged in international research collaborations. Interviews lasted between 45–75 minutes and were conducted via online conferencing platforms or face-to-face meetings, depending on participant availability.

Secondary data included:

a. The most recent QS World University Rankings (QS WUR) and THE World University Rankings (THE WUR).
b. Policy and statistical reports from the Directorate General of Higher Education, Research, and Technology (MoECRT).
c. Bibliometric data from Scopus and TopUniversities.com (e.g., IRN, CPF, CPP indicators).
d. Strategic publications from international bodies such as OECD and UNESCO regarding higher education internationalization practices.

This study employed methodological triangulation by integrating three primary data sources: (1) national focus group discussions (FGDs) with stakeholders in higher education and international cooperation; (2) semi-structured interviews with subject-matter experts; and (3) international benchmarking with selected comparator countries (Singapore, Malaysia, and China). A triangulation approach was applied by systematically comparing qualitative findings from FGDs and interviews with quantitative secondary data, ensuring internal consistency and increasing the credibility of the interpretations.

2.3 Data Analysis

Qualitative data were analysed using thematic analysis, applying the 5 Whys technique to identify the structural root causes underlying Indonesia's low performance in international rankings and global academic engagement (Serrat, 2017). Analysis followed a three-step coding process:

a. Open coding to identify initial concepts and issues emerging from transcripts.
b. Axial coding to group related codes into categories aligned with the research framework.
c. Selective coding to integrate categories into overarching themes that explained systemic barriers.

Quantitative data were analysed using the Analytic Network Process (ANP), which allows modelling of complex interdependencies among policy elements. The ANP is a decision-making method developed by Saaty in 1996 (Hisham et al., 2021) to address complex problems involving multiple interrelated criteria. Unlike the Analytic Hierarchy Process (AHP), which assumes independence among elements, ANP allows for interdependence and feedback within a network structure.

Studies by Taherdoost and Madanchian (2023) demonstrate the application of ANP in evaluating project alternatives within agile manufacturing environments, emphasizing the flexibility of this method in handling multi-criteria decisions. Büyüközkan and Güleryüz (2016) employ an integrated DEMATEL–ANP approach for selecting renewable energy sources in Turkey, highlighting ANP's capability to manage complexity and interdependencies among criteria. Gümüşhan and Çakır (2023) integrate fuzzy AHP with the ELECTRE method for environmental impact assessment, showcasing how ANP can be combined with other techniques to enhance decision-making. Tseng et al. (2018) developed an ANP–TOPSIS-based decision support system for strategic policymaking in higher education institutions, underscoring the relevance of ANP in the educational context.

Calculations were performed using Super-Decisions, resulting in priority weights for each strategic alternative based on expert judgment. The output was a final ranking of internationalization policy strategies (Hisham et al., 2021). A visual representation of the ANP model—showing clusters, criteria, and strategic alternatives—was developed to enhance methodological transparency.

Table 1. Analytic Network Process (ANP) Network Components

A. Clusters (Strategic Criteria)	
Code	**Strategic Criteria**
K1	International Research Performance (IRN)
K2	Publication Quality and Citations (CPF, CPP)
K3	International Mobility of Students and Faculty
K4	Academic Reputation and Global Networks
K5	Governance, Regulations, and Institutional Incentives
B. Policy Strategy Alternatives	
Code	**Internationalization Policy Strategies**
A1	Integration of national internationalization policies (IISMA, WCP, SAME, IRN, etc.)
A2	Reform of academic visa regulations and residence permits

A3	Funding for international collaborative research (matching grants, IRN blocks)
A4	Academic capacity building for reputable publications (writing clinics, workshops)
A5	International accreditation of programs and institutions
A6	Development of international classes and joint/double degree programs
A7	Empowerment of academic diaspora and participation in global academic networks

Each respondent was asked to conduct pairwise comparisons of the criteria and of the policy alternatives within each criterion, using a 1–9 scale following ANP conventions:

Table 2. Analytic Network Process (ANP) Scores and Interpretations

Score	Interpretation
1	Equal importance
3	Slightly more important
5	Clearly more important
7	Strongly more important
9	Absolutely more important
2,4,6,8	Intermediate judgments

To ensure the validity and relevance of the ANP judgments, the study engaged 15 subject-matter experts with substantial experience in higher education policy and internationalization practices:

Table 3. Expert Panel Composition

Expert Group	Number	IDs
Higher Education Institution Leaders	3	R1–R3
Government Officials (MoECRT, MoNDP, MoRA)	3	R4–R6
Senior Academics and Researchers	3	R7–R9
Academic Diaspora	3	R10–R12
Higher Education Policy Experts	3	R13–R15

The purposive sampling ensured diverse representation and substantive validity, enabling robust prioritization of internationalization strategies based on real-world knowledge and national policy relevance.

3. Results and Discussions

3.1 Results of the "5 Whys" Analysis – Identifying Root Causes of Internationalization Challenges

To uncover the underlying causes of Indonesia's weak global higher education competitiveness, this study employed the 5 Whys approach as a policy diagnostic tool. This method enables deep, structured inquiry into systemic problems by tracing causal chains behind surface-level symptoms (Serrat, 2017). Data for this analysis were derived from national FGDs and interviews with higher education stakeholders, representing both public and private institutions, as well as members of the Indonesian academic diaspora.

Table 4. Qualitative Analysis: 5 Whys

Main Issue	Problem 1: Limited International Research Collaboration	Problem 2: Low Quantity and Quality of International Publications	Problem 3: Minimal Participation of International Students and Faculty
Why 1	Only a small proportion of faculty are involved in joint research with foreign institutions.	Most faculty lack collaboration experience and access to high-impact international journals (e.g., Scopus/WoS).	Bureaucratic visa procedures and a lack of global promotion hinder international academic mobility.
Why 2	Collaborative research is not supported systematically and is not prioritized in national funding schemes.	Institutional support for academic writing and language editing is limited.	Visa policies have not been adapted to global academic standards, and no national body exists for HEI branding.
Why 3	Research funding policy remains individual-centric and lacks mechanisms for strategic cross-border research consortia.	There are no structured capacity-building programs to enhance CPF and CPP.	There is no institutional integration among the MoECRT, Immigration, and Foreign Affairs Ministries.
Why 4	There is no national strategy for	Academic human resource policies	Internationalization is not yet viewed

Main Issue	Problem 1: Limited International Research Collaboration	Problem 2: Low Quantity and Quality of International Publications	Problem 3: Minimal Participation of International Students and Faculty
	internationalizing science, research, and innovation.	do not target global indicators explicitly.	as a strategic, cross-sector issue.
Why 5	Current policy designs are fragmented and programmatic (e.g., IISMA, SAME, WCP), lacking a cross-institutional regulatory framework.	Institutional performance evaluations do not incorporate international benchmarks (Kapfudzaruwa, 2024).	A national regulatory framework for internationalization as part of human capital development is absent.
Root Cause	Lack of a national strategy to establish and fund international research consortia	Systemic weaknesses in capacity development policies are aligned with global performance indicators.	Lack of inter-agency coordination and a regulatory framework for facilitating academic mobility.

The 5 Whys analysis reveals that Indonesia's higher education internationalization challenges are rooted not only in technical or operational failures but also in the absence of an integrated national policy framework. In the case of research collaboration, the unavailability of government-supported international consortia remains a key bottleneck, directly impacting the International Research Network (IRN) indicator used in the QS 2024 methodology. For example, while Universitas Gadjah Mada has developed joint research with universities in Japan and the Netherlands, these collaborations are largely institution-driven without systemic national funding support.

Similarly, the human capital development system has yet to align with global performance standards such as Citations per Faculty (CPF) and Citations per Paper (CPP), which are core metrics in THE World University Rankings. Although institutions like Universitas Indonesia and Institut Teknologi Bandung have initiated writing clinics and international publication mentoring, such initiatives remain sporadic and dependent on limited competitive grants, leading to uneven research competencies across the sector.

Furthermore, restrictive visa regulations and the absence of centralized global promotion are major factors behind the extremely low presence of foreign scholars and students in Indonesian universities. By contrast, countries such as Singapore and Malaysia have established dedicated agencies to manage international branding and streamline academic residence permits (Tran et al., 2023; Olds, 2007). This gap was also noted by participants from Universitas Airlangga, which has experienced delays in bringing foreign visiting professors due to complex immigration requirements.

However, alongside these structural weaknesses, Indonesia possesses comparative advantages that could serve as strategic leverage for accelerating internationalization. These include:

a. A large and active academic diaspora with significant positions in global research networks, offering potential for sustained collaborations and co-authorship.

b. An extensive domestic higher education network that, if integrated, could form a strong foundation for regional and thematic research clusters.

c. Geostrategic positioning in Southeast Asia enables Indonesia to serve as a hub for ASEAN-focused academic programs and research initiatives.

These findings underscore that without cross-sector regulatory alignment and inter-ministerial governance; internationalization efforts will remain fragmented and programmatic. As articulated in the National Long-Term Development Plan (RPJPN) 2025–2045, higher education internationalization must be systematically embedded as a national strategy for building globally competitive human capital (Indonesia, 2024; Kapfudzaruwa, 2024). The analysis further implies that reform efforts should simultaneously address bottlenecks while leveraging Indonesia's existing strengths, ensuring that policy interventions are both corrective and opportunity driven.

3.2 Benchmarking Internationalization: Case Studies of Three Countries

Benchmarking internationalization practices in other countries is essential to identify effective policy models and structural innovations that can be adapted to the Indonesian context. Building on the 5 Whys analysis, which identified fragmented policy frameworks, limited funding mechanisms, and weak mobility facilitation as structural bottlenecks, this section examines three countries—Singapore, Malaysia, and China—that have adopted distinct yet successful approaches to improving their global higher education competitiveness. The analysis also highlights areas where Indonesia can leverage its comparative

advantages—such as a large academic diaspora, extensive domestic academic networks, and its strategic position in Southeast Asia—to adapt these models effectively.

3.2.1 Singapore: Strategic Centralization as a Global Education Hub

Singapore has pursued a highly centralized and top-down internationalization strategy aimed at positioning itself as a global education hub. Through the Global Schoolhouse framework, the government actively invited leading foreign universities to establish branch campuses and provided funding and research facilities to support them (Olds, 2007). Key instruments include the tuition grant scheme, which offers generous scholarships to attract international students, and a flexible academic visa policy tailored for foreign scholars and students. Singapore also developed integrated research clusters like One-North, which facilitate partnerships between global industries and top-tier universities (Aydin, 2021; Lourenço & Paiva, 2024).

In Indonesia, there is currently no single national body with a mandate comparable to Singapore's Education Hub Office to attract foreign higher education institutions strategically or to develop integrated education districts; recent governance roadmaps emphasize "world-class university" targets yet stop short of establishing a centralized, cross-ministerial promotion office for global outreach and academic diplomacy (Kemendikbudristek, 2023c; 2024b). Fragmentation is also visible in academic mobility administration: study permits for international students are handled via the Higher Education "Izin Belajar" system under Kemendikbudristek, while visa/immigration status is governed separately by the Directorate General of Immigration through research/education visa categories (e.g., E29/E30) (Kemendikbudristek, 2024a). Given Indonesia's stated vision of international leadership within the RPJPN/SDGs agenda, the country could leverage its ASEAN standing and academic diaspora by establishing a National Office for Global Higher Education Promotion that integrates academic diplomacy, foreign-scholar facilitation, and national branding within a single governance structure, thereby amplifying international visibility and attractiveness.

3.2.2 Malaysia: Internationalization Through Quality Assurance and Performance-Based Funding

Malaysia institutionalized internationalization by embedding it into national accreditation and performance-based funding systems. Tools such as the Malaysia Research Assessment (MyRA) and SETARA integrate international indicators—such as IRN and citations—into institutional evaluations (Chin et al., 2019b). Financial incentives are provided for universities with high levels of international research collaboration, publications in Scopus Q1/Q2 journals, and growing numbers of international students. Nationwide faculty development programs also support academic writing and journal submission (Chan & Muthuveloo, 2020).

In contrast, Indonesia's current accreditation and higher education funding mechanisms—administered by the National Accreditation Board for Higher Education (BAN-PT) and field-specific accreditation bodies such as LAMEMBA and LAM-PTKes—do not explicitly incorporate internationalization indicators such as the International Research Network (IRN), Citation per Faculty (CPF), or foreign student ratios. As a result, institutional accountability remains largely focused on input- and process-based measures, rather than on quantifiable global performance outcomes (LAMEMBA, 2022). Introducing MyRA-like metrics, as implemented in Malaysia to assess research quality and international engagement, could catalyze structural improvement (Chin et al., 2019a). Moreover, Indonesia's extensive domestic research networks—such as the Konsorsium Riset Nasional and inter-university collaborations facilitated by the Ministry of Education, Culture, Research, and Technology—could be strategically linked to performance-based funding schemes. This would incentivize universities to convert existing partnerships into internationally competitive research consortia, thereby enhancing both research impact and global visibility (Kemendikbudristek, 2023c; 2024b).

3.2.3 China: State Investment Through the Double First-Class University Strategy

China has implemented large-scale fiscal interventions through the Double First-Class Universities initiative, designating 140 universities as national priorities for transformation into world-class institutions. The central government allocates long-term budgets in the billions of yuan to support collaborative research, academic mobility, and the recruitment of foreign professors (Liu et al. 2019). This

policy combines sustained funding with institutional governance reform and the creation of international research networks. Performance reviews are conducted every five years, with internationalization metrics as a core component.

Indonesia currently lacks a coherent long-term strategic investment model for institutional internationalization. Existing funding mechanisms remain fragmented and predominantly short-term, relying heavily on annual competitive grants such as Program Kompetisi Kampus Merdeka and Matching Fund rather than sustained, transformative block funding (Kemendikbudristek, 2023a; 2023b). Establishing a "World-Class Track" for a selected cohort of 10–15 universities, supported by medium- to long-term performance-based investment schemes, would fill this structural gap. Such a program could benchmark practices from leading systems, such as Japan's Top Global University Project and South Korea's Brain Korea 21, which tie investment to clear internationalization performance indicators (Yonezawa & Shimmi, 2020). Indonesia's geostrategic position within ASEAN and its extensive academic diaspora network could be integrated into the World-Class Track, aligning funding targets with measurable outcomes such as International Research Network (IRN) growth, Citations per Publication (CPP) improvement, and attainment of international accreditation standards. This model could leverage both national resources—such as the State Budget (APBN) and Indonesia Endowment Fund for Education (LPDP)—and strategic partnerships with global institutions to enhance competitiveness and visibility (Lembaga Pengelola Dana Pendidikan, 2023; Indonesia, 2023).

Despite these gaps, Indonesia possesses several structural advantages that could be strategically leveraged to accelerate higher education internationalization. *First*, the country has an extensive domestic higher education network comprising over 4,000 institutions, providing a large and diverse platform for regional and global academic engagement. *Second*, Indonesia benefits from a vibrant academic diaspora across Asia, Europe, and North America, which represents a latent asset for initiating collaborative research, guest lectures, and dual-degree programs. *Third*, Indonesia's geopolitical position as the largest economy in ASEAN and its active role in regional cooperation frameworks—such as ASEAN University Network (AUN) and Southeast Asian Ministers of Education Organization (SEAMEO)—provides diplomatic capital and strategic access to regional academic markets. When systematically integrated into a national internationalization strategy, these comparative advantages could complement structural reforms, amplifying Indonesia's capacity to enhance global visibility and competitiveness.

Several Indonesian universities have initiated internationalization programs that demonstrate both potential and existing challenges. For instance, Universitas Indonesia has established dual-degree agreements with partner institutions in Japan, Australia, and the Netherlands, enabling student mobility and joint supervision of postgraduate research. Universitas Gadjah Mada has actively participated in global research consortia, contributing to multi-country studies funded under the ASEAN University Network and Erasmus+ frameworks. Meanwhile, Institut Teknologi Bandung has collaborated with industry and international universities on innovation-driven projects under the ASEAN IVO (ICT Virtual Organization) initiative, which integrates applied research with capacity-building for academic staff. These examples illustrate that while pockets of excellence exist, their impact remains localized and insufficiently integrated into a coherent national framework. Scaling such initiatives through policy-backed coordination could transform these isolated successes into system-wide drivers of international competitiveness.

3.3 ANP Analysis and Findings – Prioritization of Internationalization Strategies

The Analytic Network Process (ANP) analysis in this study was conducted through a structured series of steps designed to model the complexity of strategic decision-making in higher education internationalization. The process involved seven key stages: (1) visualization of policy strategy priorities, (2) identification of strategic alternatives, (3) pairwise comparison of criteria by 15 domain experts, (4) calculation of local priority weights using eigenvectors, (5) evaluation of local priority weights of alternatives within each criterion, (6) computation of global priority weights for all strategies, and (7) synthesis of the supermatrix and stabilization into a limit matrix. This stepwise methodology ensures that each decision element is evaluated both independently and within the context of its interactions across the network (Hisham et al., 2021).

Seven policy strategy alternatives (A1–A7) were formulated based on insights from national focus group discussions (FGDs), international benchmarking, and alignment with the 2025–2045 National Long-

Term Development Plan (RPJPN). These strategies integrate structural (inter-ministerial regulation), functional (training and accreditation), and fiscal (research incentives and joint grants) dimensions, consistent with the internationalization literature in higher education (Tran et al., 2023; de Wit, 2019). They also respond directly to the root causes identified in the 5 Whys analysis—namely, fragmented governance, limited research consortia funding, and restrictive mobility regulations—while drawing on comparative lessons from Singapore, Malaysia, and China as described in the benchmarking section.

The expert panel consisted of five categories of subject-matter experts: university leaders, government officials, senior academics, academic diaspora, and higher education policy experts. Based on the pairwise comparison of criteria, International Research Performance (K1) and Publication Quality and Citations (K2) were rated as the most strategic determinants of global competitiveness—consistent with ranking indicators from QS and THE.

A critical component of this process is the eigenvector, a mathematical concept that captures the relative importance, or local priority, of each criterion. In ANP, eigenvectors are derived from expert judgments in pairwise comparisons and are used to normalize the influence of each criterion in the network. The eigenvector results in this study indicate the following strategic priorities:

Table 5. Local Priority Weights of Strategic Criteria (Eigenvector)

Code	Strategic Criteria	Priority Weight
K1	International Research Performance (IRN)	0.487
K2	Publication Quality and Citations (CPF, CPP)	0.261
K3	International Mobility of Students and Faculty	0.133
K4	Academic Reputation and Global Networks	0.077
K5	Governance, Regulations, and Institutional Incentives	0.042

This distribution demonstrates that academic performance-based indicators, particularly IRN and CPF, are considered most critical by experts, whereas non-academic dimensions such as reputation and governance are seen as supportive but not primary drivers of global competitiveness.

The next stage of analysis involved evaluating the local priority weights of alternatives under each criterion, mapping how effective each strategy is in addressing specific strategic goals. The findings show a clear differentiation:

a. Under K1 (IRN), the most impactful strategies were A3 (international research funding) and A1 (policy integration).

b. For K2 (citations), A4 (academic writing training), and A5 (international accreditation) ranked highest.

c. For K3 (mobility), experts favoured A2 (visa policy reform) and A6 (international programs).

d. K4 and K5, while supported by A5 and A7, contributed less significantly to the total weight.

This variation illustrates clustered dependency—a key concept in ANP—where different strategies disproportionately affect certain criteria rather than all equally (Hisham et al., 2021).

The global priority weights were then calculated by multiplying each strategy's local weight by the corresponding criterion weight. The final ranking of strategic alternatives is as follows:

Table 6. Global Priority Weights of Strategies

Code	Internationalization Policy Strategies	Global Weight
A1 ***	Integration of national internationalization policies (IISMA, WCP, SAME, IRN, etc.)	0.2087
A2 **	Reform of academic visa regulations and residence permits	0.1954
A3 *	Funding for international collaborative research (matching grants, IRN blocks)	0.1401
A4	Academic capacity building for reputable publications (writing clinics, workshops)	0.1347
A5	International accreditation of programs and institutions	0.1308
A6	Development of international classes and joint/double degree programs	0.1093
A7	Empowerment of academic diaspora and participation in global academic networks	0.0810

The results indicate that A2 and A3 are the top strategic priorities, underscoring the urgent need to address regulatory constraints on academic mobility and to invest in sustained collaborative research funding. Interestingly, A1 also ranked highly, reflecting the strong demand for integrated policy frameworks to consolidate existing initiatives. Conversely, A7, while still valuable—particularly in leveraging Indonesia's large and influential academic diaspora—appears more suitable as a complementary initiative that can be expanded once structural and fiscal foundations are in place.
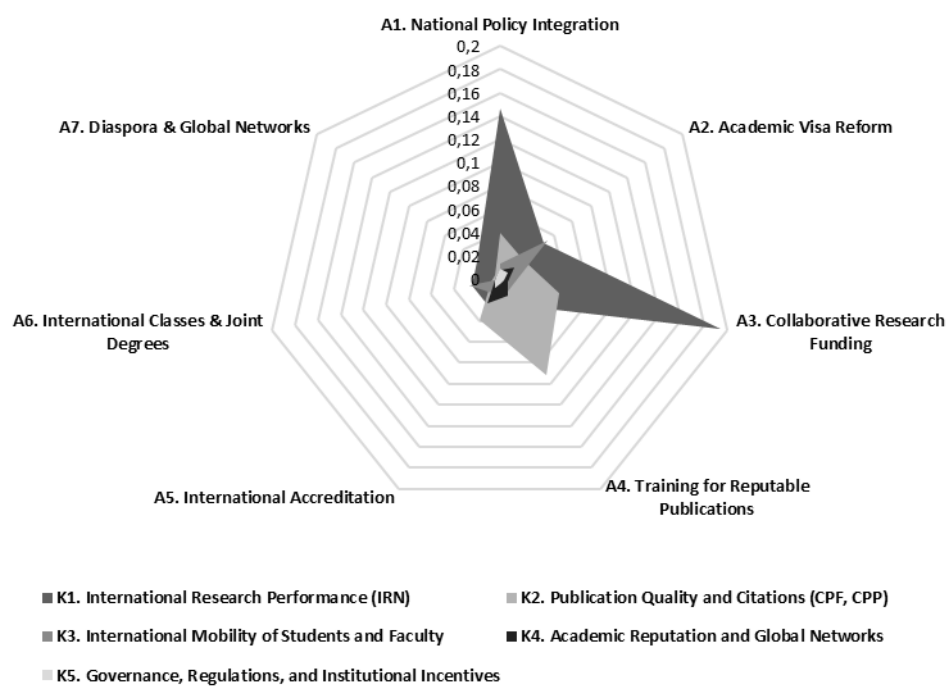

Figure 1. Strategy Contributions to Each Criterion

The supermatrix, a structured matrix incorporating all local priority vectors of the network's elements, was transformed into a limit matrix to reflect the stable, long-term state of the system. In this study, a simplified network structure was applied—five independent criteria and seven independent strategies—without interdependencies or feedback loops. As such, the supermatrix already represented a stable state of priorities, making the limit matrix numerically equivalent. This approach, as supported by Taherdoost and Madanchian (2023), is valid in public policy contexts where strategic alternatives are implemented independently and clarity is prioritized over systemic complexity.

The results of the ANP analysis provide clear guidance for enhancing the global competitiveness of Indonesian higher education institutions. The two most urgent and impactful policy strategies—reforming academic visa regulations (A2) and funding international research consortia (A3)—directly address the barriers identified in the 5 Whys analysis and align with best practices observed in Singapore, Malaysia, and China. At the same time, strategies such as A1 policy integration and A4 academic capacity building can maximize Indonesia's comparative advantages, including its broad domestic academic network and vibrant diaspora, to accelerate progress toward IRN and CPF targets.

These findings yield several key policy implications:

a. Visa regulation reform must be elevated as a cross-sectoral strategic priority, requiring sustained coordination between the Ministry of Education, the Directorate General of Immigration, and the Ministry of Foreign Affairs.

b. A comprehensive national strategy should consolidate fragmented programs (IISMA, WCP, SAME) into a coherent regulatory and incentive framework, supported by legislation and clear institutional mandates.

c. Mid-term, performance-based research funding is essential to support international consortia, focusing on measurable outputs such as Q1/Q2-indexed publications, joint projects, and IRN-linked collaborations, leveraging both national and international funding sources.

By adopting these reforms—grounded in empirical diagnostics, comparative learning, and strategic prioritization—Indonesia can address structural weaknesses, capitalize on its existing strengths, and advance toward the RPJPN 2025–2045 vision of becoming a world-class, knowledge-based economy.
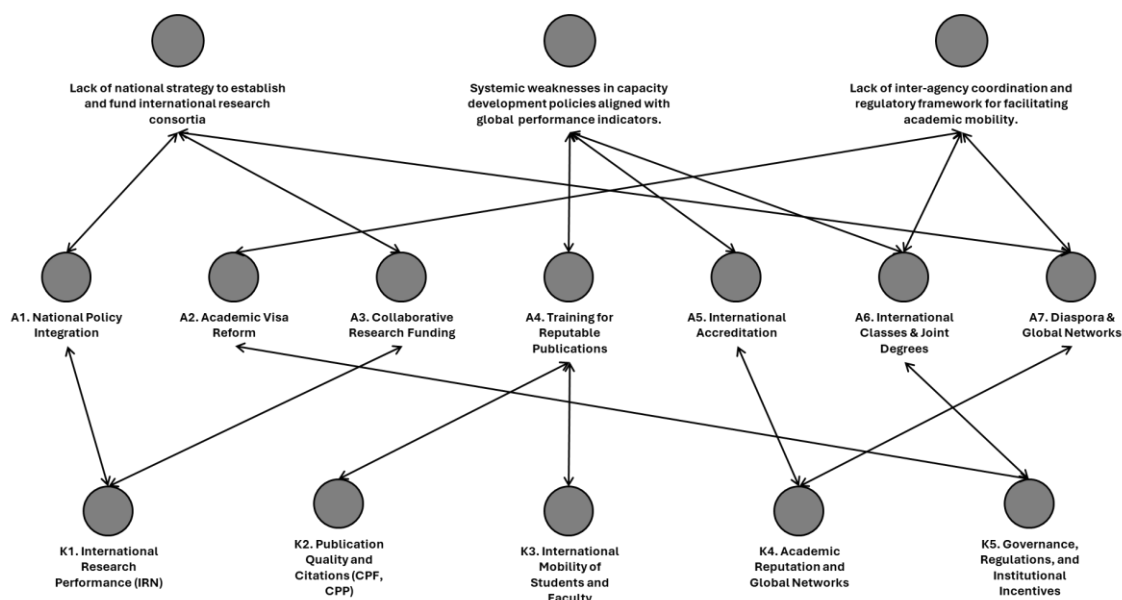
3.4   Discussion

Figure 2. Strategy Map of Root Causes, Strategic Alternatives, and Global Indicators.

The findings of this study reveal that the limited global competitiveness of Indonesian higher education institutions is not primarily due to resource constraints or inadequate infrastructure but rather stems from a more fundamental challenge—the absence of an integrated, globally oriented national policy framework. The 5 Whys analysis identified that the root causes of weak international research collaboration, limited high-impact publications, and minimal participation of international students and faculty lie in fragmented, sectoral, and short-term policy arrangements. While initiatives such as the Indonesian International Student Mobility Awards (IISMA), the World Class Professor (WCP) program, and the Scheme for Academic Mobility and Exchange (SAME) signify important progress, they operate in silos without coordination under a holistic, inter-ministerial governance mechanism.

These findings align with the Theory of Higher Education Internationalization, which underscores that internationalization is a sustained and comprehensive process that must be embedded into institutional missions, strategies, and governance structures (Kapfudzaruwa, 2024; Tran et al., 2023). Week (2019) emphasizes that successful internationalization requires policy coherence, long-term state commitment, and integration beyond mobility—extending into curriculum development, faculty capacity building, research collaboration, and governance reform. In the Indonesian context, this necessitates a national framework that systematically links institutional initiatives to policy-level mandates and long-term planning. Zhang (2020) further notes that in many Asian systems, bureaucratic inertia and insufficient contextual adaptation often constrain policy effectiveness—an observation that resonates with Indonesia's current condition.

Insights from international benchmarking reinforce these conclusions. Singapore's centralized Global Schoolhouse strategy positioned higher education as a core element of global diplomacy and the knowledge economy, supported by targeted tuition grant schemes and research clusters (Olds, 2007). Malaysia institutionalized internationalization within accreditation and funding systems through instruments such as MyRA and SETARA, aligning fiscal incentives with measurable global performance

metrics (Chin et al., 2019a). China's Double First-Class Universities policy exemplifies large-scale, state-led transformation through sustained funding, governance reforms, and integration of international performance indicators (Liu et al. 2019).

These cases illustrate the Triple Helix Model principle that sustainable innovation in higher education emerges from dynamic and coordinated interactions between government, universities, and industry (Xing & Marwala, 2017; Ranga & Etzkowitz, 2013). In comparator countries, the state plays a central coordinating role, ensuring that universities and industry collaborate on knowledge production, skill development, and international outreach. In contrast, Indonesia lacks an institutionalized Triple Helix mechanism, with limited synergy between education authorities, immigration agencies, and international cooperation bodies, hindering the creation of a conducive ecosystem for higher education globalization.

The benchmarking results and ANP prioritization underscore that the advancement of Indonesia's higher education internationalization cannot rely solely on institutional initiatives, but must be anchored in a robust Triple Helix collaboration. In the top-ranked strategies—academic visa reform, international research funding, and capacity building for high-impact publications—the government's role is central in providing enabling regulations, fiscal incentives, and diplomatic frameworks. Universities, in turn, act as the primary nodes for executing these strategies by developing internationally relevant curricula, engaging in research consortia, and fostering academic mobility. Industry participation is equally crucial, particularly in co-financing research, offering applied research opportunities, and expanding global professional networks for graduates. This synergistic configuration mirrors the practices of benchmark countries such as Singapore and China, where state-led coordination, institutional innovation, and industry engagement converge to enhance global competitiveness. Embedding this tripartite cooperation into Indonesia's policy architecture would transform fragmented initiatives into a coherent, innovation-driven internationalization ecosystem.

From the perspective of Global Assemblage Theory (Nyaaba et al., 2024), Indonesia's current approach can be understood as a partial and fragmented adaptation of transnational policy models. Programs like IISMA and SAME represent imported elements of global higher education policy, but without coherent integration into the national regulatory and institutional logic. Healey (2018) and Stein & de Oliveira Andreotti (2017) caution that without deliberate adaptation and alignment of these policy assemblages to local contexts, such initiatives risk remaining performative or failing to achieve transformative impact.

Against this backdrop, the ANP analysis provides quantitative evidence to guide policy prioritization. The results indicate that reforming academic visa regulations (A2, global weight 0.2087) and providing sustained funding for international collaborative research (A3, 0.1954) are the most urgent interventions, followed closely by integration of national internationalization policies (A1, 0.2087) and academic capacity building for reputable publications (A4, 0.1401). These strategies directly target the improvement of International Research Network (IRN) and Citations per Faculty (CPF)—key metrics in QS and THE global rankings. Conversely, diaspora empowerment and global branding (A7) hold a relatively low strategic weight (0.0810), indicating that such network-based strategies will be most effective once the structural and fiscal foundations of internationalization are firmly established.

This prioritization aligns with the RPJPN 2025–2045 mandate to develop globally competitive human capital as a pillar of Indonesia's transition to a high-income economy (Indonesia, 2024). Within this framework, higher education transformation should be driven by:

a. Regulatory reform—notably academic visa policy integration and inter-ministerial coordination.

b. Institutional consolidation—streamlining fragmented programs (IISMA, WCP, SAME) under a unified policy and governance architecture.

c. Performance-based fiscal incentives—targeting internationally benchmarked outputs such as Q1/Q2-indexed publications, long-term research consortia, and international accreditation.

Ultimately, integrating the results of the 5 Whys diagnostic, international benchmarking, and ANP modelling—grounded in relevant internationalization theory—confirms that higher education internationalization in Indonesia must shift from ad hoc, programmatic initiatives to a coherent, long-term, and cross-sectoral strategy. Achieving the RPJPN 2025–2045 vision will require not only nationally

competitive universities but also institutions capable of sustained collaboration, innovation, and performance within the global academic landscape.

Conclusions

The results of the ANP modelling confirm these structural weaknesses, identifying academic visa reform, sustained funding for international collaborative research, and academic capacity building for high-impact scientific publications as the top three strategic priorities for advancing Indonesia's global engagement. Meanwhile, strategies such as diaspora engagement and international branding are positioned as complementary measures, reflecting Indonesia's early stage of systemic readiness for full-scale global competition. To achieve the RPJPN 2025–2045 vision of producing globally competitive human capital, Indonesia must transition from fragmented, program-based interventions toward structural reforms that embed internationalization within higher education governance. This transformation requires the integration of global performance indicators—such as the International Research Network (IRN), Citations per Faculty (CPF), and international student ratios—into national monitoring and policy evaluation frameworks. By doing so, higher education can evolve into a strategic driver of Indonesia's global presence and a cornerstone for achieving sustainable development in the knowledge-based economy era.

This study acknowledges several limitations that may influence the scope and generalizability of its findings. *First*, the benchmarking analysis was limited to three comparator countries—Singapore, Malaysia, and China—chosen for their relevance and policy success yet excluding other potential models from regions such as Europe or North America. *Second*, the reliance on secondary data and national policy documents may not fully capture institutional-level dynamics and informal practices that shape internationalization outcomes. *Third*, the analysis primarily focused on macro-level policy frameworks without conducting in-depth fieldwork at the university level. Future research could address these gaps by incorporating multi-country comparative studies, longitudinal institutional case studies, and mixed method approaches that integrate policy analysis with primary data collection. Such extensions would provide a more nuanced understanding of the operational and contextual factors driving higher education internationalization in Indonesia.

Recommendation

The recommendations proposed in this study are designed to be directly actionable by policymakers at both the ministerial and cross-sectoral levels. The development of a National Grand Design for Higher Education Internationalization, for example, can be operationalized through a joint decree (SKB) between the Ministry of Education, Culture, Research and Technology; Ministry of Finance; Ministry of Foreign Affairs; Directorate General of Immigration; and the National Research and Innovation Agency (BRIN). Academic visa reform can be executed via integrated service platforms under the Directorate General of Immigration, supported by academic visa facilitation units at top universities. Mid-term collaborative research funding can be jointly administered by LPDP and BRIN, with performance monitoring aligned to BAN-PT and LAM accreditation systems. By assigning clear institutional mandates, securing sustainable funding, and embedding global performance metrics into national evaluation frameworks, these strategies provide a concrete roadmap for transforming higher education internationalization from programmatic initiatives into a systemic, results-driven policy framework.

a.   Develop a National Strategy for Higher Education Internationalization as a Cross-Sectoral Policy

The government should spearhead the formulation of a National Grand Design for Higher Education Internationalization, ratified through inter-agency consensus involving the Ministry of Finance, Ministry of Foreign Affairs, Directorate General of Immigration, and the National Research and Innovation Agency (BRIN). This strategy should set mid-term (2025–2035) targets based on global indicators—such as the International Research Network (IRN), Q1/Q2 publication output, and the proportion of international students and faculty. To operationalize the strategy, a National Office for the Promotion of Indonesian Higher Education should be established, with mandates covering academic diplomacy, global outreach, and academic visa facilitation. Centralized models in Singapore (Global Schoolhouse) and Malaysia

(SETARA) have demonstrated the effectiveness of unified governance in accelerating campus internationalization (Olds, 2007; Chin et al., 2019b).

   b.   Reform Academic Visa Regulations and Services to Enhance International Mobility

   Academic visa regulations must be revised to meet global standards, including dedicated categories for education visas, research visas, and short-term scholar visas. A joint visa processing platform between the Directorate General of Higher Education and the Directorate General of Immigration should ensure processing within 10 working days. Additionally, selected leading universities should host Academic Visa Facilitation Centres to streamline administrative procedures. This strategy—ranked highest in ANP analysis (0.2087)—is supported by best practices from mobility-oriented countries (Aydin, 2021)

   c.   Design a Mid-Term Funding Scheme for International Research Consortia

   Establish the Indonesia Research Collaboration Fund (IRCF) with a matching fund mechanism in partnership with global institutions, guaranteeing a minimum of five years of funding. This scheme should finance joint publications, visiting professorships, and co-supervised doctoral programs between Indonesian and international universities. Coordination with LPDP, BRIN, and major international grants (e.g., Newton Fund, Erasmus+, Horizon Europe) is critical. With an ANP weight of 0.1954, this recommendation reflects best practices from China's Double First-Class initiative (Liu et al. 2019).

   d.   Institutionalize Capacity Building for Reputable Publications and Global Citations

   Create Global Publication Centres (GPCs) at major universities to provide structured academic writing training, coaching clinics, and professional language editing services. Faculty should undergo mandatory programs aimed at producing Q1/Q2-indexed publications through international collaboration. Strategic partnerships with Scopus and WoS publishers should be pursued for knowledge transfer and editorial fellowships. Ranked third in ANP analysis (0.1401), this strategy aligns with Malaysia's MyRA-driven capacity-building initiatives (Chan & Muthuveloo, 2020).

   e.   Integrate Internationalization Metrics into Accreditation and Institutional Performance Evaluation

   Embed key internationalization indicators—including IRN, Citations per Faculty (CPF), Citations per Paper (CPP), joint/double degree programs, and foreign student ratios—into accreditation and performance assessment frameworks used by BAN-PT, LAMEMBA, and LAM-PTKes. A standardized Internationalization Performance Rubric should be developed for state universities (PTN-BH, PTN Satker) and high-performing private universities, with evaluations conducted every three years. These assessments should form the basis for performance-based incentives. Malaysia's SETARA and MyRA systems illustrate the effectiveness of such metrics in driving systemic transformation (Chin et al., 2019a).

   Collectively, these five recommendations move beyond technical or programmatic enhancements, targeting structural and regulatory reforms essential to prepare Indonesian universities for the demands of a rapidly evolving global academic landscape. Fully aligned with the RPJPN 2025–2045—particularly its emphasis on globally competitive human capital development (Indonesia, 2024)—these measures position internationalization not as an end, but as a strategic instrument for transforming Indonesia's higher education system into one that is inclusive, collaborative, and globally competitive.

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