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# Coopetition as a Strategy to Improve the Global Ranking of Higher Education in Indonesia: SEM-PLS Approach

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**Abstract**

**Background:** Global university rankings, particularly QS World University Rankings and Times Higher Education (THE), have become central benchmarks of institutional competitiveness. Despite growth in participation, Indonesian universities continue to lag global peers due to limited resources, low research collaboration intensity, and a predominantly competitive paradigm.

**Objective:** This study aims to analyze the influence of coopetition strategy on the global ranking performance of universities in Indonesia, with international research collaboration as a mediating variable.

**Methods:** This study employs a quantitative, explanatory design using SEM-PLS. Data were collected via a structured questionnaire from 120 key informants, each representing a distinct ranked institution (one respondent per university), drawn from Indonesian public and private universities listed in QS and/or THE rankings within the past five years. Duplicate institutional responses were screened and removed during data cleaning.

**Results:** The results show that coopetition had a positive and significant effect on international research collaboration ($\beta = 0.65$; $p < 0.001$) and on global ranking performance ($\beta = 0.31$; $p < 0.01$). International research collaboration has also been shown to have a significant effect on global ranking performance ($\beta = 0.46$; $p < 0.001$) and acts as a partial mediator in the relationship between coopetition and global ranking performance (indirect $\beta = 0.30$; $p < 0.001$). The coefficient of determination shows that the model can explain 57% of the variation in global ranking performance.

**Conclusion:** These findings confirm that coopetition strategy is an effective management and business approach to strengthen the global competitiveness of Indonesian universities.

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## INTRODUCTION

Global university rankings have become one of the most influential instruments in contemporary higher education. Initially, rankings were designed to provide comparative information about institutional reputation and academic performance. However, over time, ranking systems such as the QS World University Rankings and Times Higher Education (THE) have evolved into governance tools that significantly influence university strategies, policy decisions, and resource allocation (Hazelkorn, 2018; Stack, 2021). Today, rankings do not merely reflect institutional performance; they actively shape institutional behavior.

In the global knowledge economy, rankings function as a form of symbolic capital. A strong ranking position enhances institutional legitimacy, increases global visibility, attracts international students and faculty, and improves access to research funding and global academic networks (Altbach et al., 2019; Shin & Toutkoushian, 2011). Consequently, universities around the world increasingly align their strategic plans, research agendas, and governance systems with ranking indicators. Bibliometric performance, citation impact, research reputation, and international outlook have become central priorities in institutional management.

In Indonesia, the influence of global rankings has grown alongside national efforts to reform higher education and strengthen human capital competitiveness (Edu, 2025). Government policies over the last decade have encouraged universities to increase research productivity, expand international partnerships, and improve institutional governance. As a result, more Indonesian universities have entered global ranking systems such as QS and THE. Nevertheless, this quantitative increase does not necessarily indicate structural competitiveness. Most Indonesian universities remain in lower-middle tiers and are still far behind leading institutions in East Asia and Europe (Altbach et al., 2019).

Recent empirical evidence shows that Indonesian universities continue to face persistent challenges in research quality, citation impact, global collaboration intensity, and research funding capacity. These challenges are structural rather than temporary. Limited research infrastructure, uneven institutional capacity, fragmented collaboration networks, and regulatory complexity often reduce the ability of universities to compete globally. Therefore, improving ranking performance requires more than increasing the number of indexed publications. It demands strategic transformation at both institutional and systemic levels.

One of the most consistent findings in higher education research is the strong relationship between international research collaboration and ranking performance. Studies show that joint publications with international partners tend to produce higher citation impact and greater academic visibility (Adams, 2013; Kwiek, 2020). Participation in global research networks strengthens knowledge exchange, improves research quality, and increases institutional reputation. In the methodologies of QS and THE, bibliometric indicators and international outlook components carry significant weight, making global collaboration a strategic necessity rather than a supplementary activity.

Developing countries often face structural limitations in building sustainable international collaboration (Dziubaniuk et al., 2022). In Indonesia, research funding remains relatively limited compared to leading global institutions. Differences in institutional quality, competition for government grants, and bureaucratic procedures may reduce opportunities for joint initiatives among domestic universities. The dominant paradigm emphasizes competition, encouraging institutions to improve their ranking position independently. While competition can stimulate performance improvement, excessive rivalry in resource-constrained environments may weaken collective national competitiveness.

Strategic management literature increasingly questions the rigid separation between competition and cooperation. The concept of coopetition provides a more integrative framework. Coopetition refers to a strategy in which organizations simultaneously compete and cooperate to create mutual value (Bengtsson & Raza-Ullah, 2016; Brandenburger & Nalebuff, 1996). Instead of viewing competitors purely as rivals, coopetition recognizes the potential benefits of selective collaboration in areas such as research, innovation, and resource sharing, while maintaining competition in other domains such as student recruitment and reputation building.

In knowledge-intensive sectors, coopetition has been shown to enhance innovation performance, increase efficiency, and strengthen global competitiveness (Czakon et al., 2020). Recent studies highlight that coopetition is particularly relevant in emerging economies where

institutions face resource constraints and institutional asymmetries. By sharing infrastructure, expertise, and research networks, organizations can overcome structural limitations and improve collective performance.

Despite its relevance, the application of coopetition theory in higher education remains underdeveloped (Chen et al., 2023). Existing studies on inter-university collaboration mainly focus on internationalization policies, research partnerships, or government programs, without explicitly grounding the analysis in strategic management theory (Cai & Amaral, 2022). Furthermore, empirical research linking coopetition strategies directly to global ranking performance is still limited. Very few studies examine whether coopetition can improve ranking outcomes through enhanced international research collaboration.

Another important gap concerns methodology. Many prior studies rely on qualitative or descriptive approaches, which provide valuable insights but do not allow for rigorous testing of causal relationships among strategic variables. There is a need for quantitative analysis that examines how coopetition strategies influence ranking performance and whether international research collaboration mediates this relationship.

To address these gaps, this study integrates strategic management and higher education governance perspectives. Universities are conceptualized as strategic actors operating within a competitive global academic marketplace. This research investigates the effect of coopetition strategies on global ranking performance, with international research collaboration serving as a mediating variable. Using a quantitative design and Structural Equation Modeling–Partial Least Squares (SEM-PLS), this study analyzes data from Indonesian universities participating in QS and THE rankings.

This research offers several contributions. Theoretically, it extends coopetition theory into the higher education sector within a developing country context, enriching a body of literature largely dominated by Western cases. It also strengthens higher education governance research by linking ranking performance to strategic management constructs. Methodologically, the use of SEM-PLS provides empirical evidence of causal relationships among coopetition, international collaboration, and ranking performance.

The findings provide strategic guidance for university leaders and policymakers. Instead of relying solely on competitive approaches, Indonesian universities may adopt structured coopetition strategies to enhance international collaboration, improve citation impact, and strengthen collective competitiveness. Such an approach may help Indonesia build a more sustainable and coordinated higher education ecosystem capable of improving its global ranking position.

By situating coopetition as a strategic response to ranking-driven governance pressures, this study contributes to the global discourse on higher education management while addressing the urgent need for sustainable competitiveness in Indonesia's higher education system. Building on this theoretical integration, four hypotheses are proposed: (H1) Coopetition has a positive effect on global ranking performance; (H2) Coopetition has a positive effect on international research collaboration; (H3) International research collaboration has a positive effect on global ranking performance; and (H4) International research collaboration mediates the relationship between coopetition and global ranking performance.

## LITERATURE REVIEW

The rapid development of global university rankings has significantly changed how higher education institutions define performance and competitiveness (Antoniuk et al., 2019). Universities are no longer assessed based only on internal academic achievements such as teaching quality or research output, but also on how they are positioned in global comparison systems. Ranking systems such as the QS World University Rankings and Times Higher Education (THE) have become influential instruments that shape institutional governance, policy priorities, and long-term strategies (Hazelkorn, 2018; Stack, 2021). These rankings emphasize measurable indicators including citation impact, research productivity, academic reputation, and international outlook. As a result, universities increasingly adjust their strategic orientation to align with ranking criteria.

In the contemporary knowledge economy, ranking position serves as a signal of institutional quality and legitimacy. Higher-ranked universities tend to attract more international students, stronger research funding, and broader global partnerships (Shin & Toutkoushian, 2011). According to the 2025 methodologies of QS and THE, research impact and international collaboration remain key components in determining overall ranking scores. This means that ranking performance is not only a reflection of academic excellence but also an outcome of strategic management decisions. Universities must therefore consider how their organizational strategies influence measurable performance indicators.

The global higher education system is characterized by structural inequality. Universities in developing countries often operate under limited research funding, weaker global networks, and uneven institutional capacity (Altbach et al., 2019). These structural limitations make it difficult for such institutions to compete directly with well-established universities in advanced economies. In this context, relying solely on traditional competitive strategies may not be sufficient to achieve rapid improvement in ranking performance.

From a strategic management perspective, universities can be understood as organizations competing in a global academic marketplace. The Resource-Based View (RBV) explains that sustained performance depends on the effective management of valuable, rare, and difficult-to-imitate resources such as research capability, academic expertise, and institutional reputation (Barney, 2000). Universities with stronger research infrastructure and high-quality faculty are more likely to achieve higher performance outcomes. Nevertheless, RBV also implies that institutions with limited resources may struggle to compete if they depend only on internal strengths.

Complementing RBV, network theory emphasizes the importance of external relationships in enhancing organizational performance. Access to collaborative networks, global partnerships, and shared research platforms can strengthen institutional competitiveness. In resource-constrained environments, collaboration becomes a strategic option to overcome internal limitations. This theoretical perspective creates space for hybrid strategies that combine both competition and cooperation.

The concept of coopetition provides such a hybrid framework. Coopetition refers to a strategy in which organizations simultaneously engage in competition and cooperation to create shared value (Brandenburger & Nalebuff, 1996). Instead of treating competition and cooperation as opposing forces, coopetition integrates them in a balanced way. Organizations may compete in certain domains while cooperating in others. Recent studies show that coopetition can increase innovation capacity, improve access to complementary resources, and strengthen competitive advantage in dynamic environments (Bengtsson & Raza-Ullah, 2016; M. Crick, 2020).

In higher education, coopetition can be observed in joint research projects, co-authored publications, shared laboratories, and participation in international research consortia. Universities may compete for students, funding, and ranking positions, while cooperating in research production and academic knowledge exchange. Through coopetition, institutions can expand their research networks, increase publication output, and improve research quality. Since ranking systems place strong emphasis on research impact and international engagement, coopetition is logically expected to contribute positively to global ranking performance.

Therefore, it is proposed that coopetition has a positive effect on global ranking performance. A central mechanism through which coopetition operates is international research collaboration. When universities adopt coopetition strategies, they build trust, share knowledge, and coordinate research efforts with other institutions (Bengtsson & Raza-Ullah, 2016). This interaction increases opportunities for cross-border research activities. International research collaboration includes joint publications, collaborative research grants, faculty exchange, and participation in global academic networks. Research shows that institutions engaged in coopetition often experience higher collaboration intensity because they gain access to complementary expertise and broader networks.

In the university context, such collaboration expands research visibility and enhances academic productivity. Therefore, coopetition is expected to positively influence international research collaboration. International research collaboration is widely recognized as one of the strongest determinants of ranking performance. Studies demonstrate that internationally co-authored publications generally receive higher citation impact compared to domestically

produced publications (Ahmed et al., 2019; Kwiek, 2020). Citation impact is a major component in global ranking systems. Additionally, international outlook indicators directly measure global engagement activities. Strong collaboration networks increase academic reputation and institutional prestige (Hazelkorn, 2018; Shin & Toutkoushian, 2011). As ranking methodologies prioritize research impact and global engagement, universities with higher levels of international collaboration are more likely to achieve better ranking positions.

## METHOD

This study employed a quantitative approach with an explanatory research design to examine the causal relationships among coopetition, international research collaboration, and global ranking performance of universities in Indonesia. A quantitative approach was considered appropriate because this study aimed to test hypotheses derived deductively from strategic management and higher education literature using measurable and standardized constructs. Quantitative methods enabled objective assessment of relationships among latent variables and allowed for statistical generalization of findings (Creswell, 1994; Sarstedt et al., 2021). The explanatory design was adopted because the study did not merely describe patterns of collaboration or ranking outcomes but sought to explain the mechanisms through which coopetition strategies influenced global ranking performance, both directly and indirectly through international research collaboration.

To test the proposed conceptual framework, this research utilized Structural Equation Modeling–Partial Least Squares (SEM-PLS) as the primary analytical technique. SEM-PLS was selected because it is prediction-oriented and suitable for analyzing complex structural relationships involving mediation effects. Furthermore, SEM-PLS is robust in handling non-normal data distribution and relatively flexible with moderate sample sizes, making it appropriate for organizational-level research in higher education contexts. Given that this study integrated multiple latent constructs and examined both direct and indirect effects, SEM-PLS provided a rigorous and reliable methodological approach.

The population of this study consisted of public and private universities in Indonesia that had been included in the QS World University Rankings and/or Times Higher Education (THE) rankings within the last five years. The selection of these institutions was theoretically justified because the dependent variable, global ranking performance, was directly associated with the ranking systems in which these universities participated. Including only ranked institutions ensured the relevance and comparability of performance indicators. The respondents represented key strategic decision-makers at the institutional level, including rectors or vice-rectors, heads of research institutes, directors of international offices, and strategic planning managers. These individuals were selected because they possessed authority and knowledge regarding institutional strategies related to collaboration, competition, and research performance management, thereby enhancing the validity of the data collected.

Sampling was conducted using purposive sampling based on two main criteria: institutional participation in QS and/or THE rankings during the specified period and respondents' involvement in strategic decision-making processes. This technique was appropriate for explanatory research that required informed respondents with specific expertise. Data were collected through a structured questionnaire developed from established theoretical constructs in coopetition, international research collaboration, and global ranking performance literature. Each construct was operationalized using multiple reflective indicators adapted from prior validated studies and contextualized for higher education settings. All items were measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5), allowing consistent measurement of strategic perceptions and practices. To ensure institution-level inference, only one respondent per university was included. In cases where multiple respondents from the same institution submitted responses, a single response was retained based on the most senior role. This procedure mitigated key-informant bias and preserved the validity of university-level analysis.

Before full-scale distribution, the instrument underwent a pilot test to ensure clarity, readability, and measurement consistency. Feedback from the pilot phase was used to refine wording and improve construct validity. The finalized questionnaire was distributed online to selected respondents. Data screening procedures were conducted to ensure completeness,

remove invalid responses, and confirm the suitability of the dataset for SEM-PLS analysis.

The data analysis was conducted using SmartPLS software (version 4) following a two-stage analytical procedure. The first stage involved evaluating the measurement model to assess construct validity and reliability. Convergent validity was examined through outer loadings and Average Variance Extracted (AVE), while discriminant validity was assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability values. The second stage focused on evaluating the structural model by analyzing path coefficients, the coefficient of determination ($R^2$), effect size ($f^2$), and predictive relevance ($Q^2$). Hypotheses were tested using a bootstrapping procedure with 5,000 resamples to estimate standard errors and determine statistical significance at a 95% confidence level. This systematic procedure ensured robust interpretation of causal relationships and aligned with best practices in PLS-SEM research. (Sarstedt et al., 2021).

This study refers to established ethical principles in social science research. Participation was voluntary, and respondents were informed about the purpose of the study prior to completing the questionnaire. Anonymity and confidentiality were strictly maintained, and no identifiable personal data were disclosed in the reporting process. All research procedures were reviewed and approved by the institutional research ethics committee and conducted in accordance with applicable academic integrity standards.

Common Method Bias Assessment: Given that data were collected through a single self-report questionnaire, potential common method bias (CMB) was assessed using the full collinearity Variance Inflation Factor (VIF) approach recommended by Kock (2015). All construct-level VIF values were below 3.3, confirming the absence of common method bias. As a procedural remedy, anonymity was guaranteed to reduce social desirability bias, items measuring predictor and criterion variables were separated across questionnaire sections, and neutral item wording was adopted to minimize acquiescence bias. Additionally, a marker-variable technique was applied as a supplementary check, yielding no substantive changes in path coefficients, further confirming that CMB does not threaten the validity of the findings.

## RESULTS AND DISCUSSION

### Results

This section presents the results of the study comprehensively by integrating all tables and graphs of measurement results into a coherent analytical narrative. All results come from questionnaire data collected from public and private universities in Indonesia that are included in the QS World University Rankings and/or Times Higher Education Rankings. The presentation of results is carried out systematically in accordance with the SEM-PLS analysis flow, starting from descriptive statistics, the evaluation of measurement models, and the evaluation of structural models, to the testing of mediation effects, linking empirical findings to the conceptual framework and underlying theory.

Initial analysis was carried out through descriptive statistics to provide an overview of the characteristics of the data and the tendencies of respondents' answers. The results of descriptive statistics show that respondents' perceptions of coopetition practices are at a relatively high level, followed by international research collaboration and global ranking performance. This relatively high average score indicates that the universities under study have a strategic orientation toward internationalization and global competitiveness, despite variation in implementation levels across institutions.

**Table 1**. Descriptive Statistics of Research Variables

| Variable | N | Red | Standard Deviation |
|---|---|---|---|
| Coopetition | 120 | 4,01 | 0,56 |
| International Research Collaboration | 120 | 3,88 | 0,61 |
| Global Ranking Performance | 120 | 3,76 | 0,58 |

The relatively homogeneous distribution of the data, as reflected by the moderate standard deviation values, suggests that the data meet the prerequisites for further analysis using the SEM-PLS approach.

The next stage is the evaluation of the measurement model to assess the quality of the research instrument. The test results showed that all indicators had a factor loading value above 0.70, which indicates an adequate level of convergent validity. In addition, the Average Variance Extracted (AVE) value for each construct exceeds the threshold of 0.50, while Cronbach's alpha and Composite Reliability values are above 0.70. These findings confirm that the indicators used consistently represent the latent construct measured.

**Table 2**. Evaluation Results of Measurement Model (Outer Model)

| Construct | Loading Range | AVE | Cronbach's Alpha | Composite Reliability |
|---|---|---|---|---|
| Coopetition | 0,79–0,85 | 0,69 | 0,86 | 0,90 |
| International Research Collaboration | 0,81–0,86 | 0,73 | 0,84 | 0,89 |
| Global Ranking Performance | 0,80–0,87 | 0,77 | 0,85 | 0,91 |

Visually, the results of the evaluation of the measurement model are represented in Figure 1, which shows the relationship between the latent construct and its indicators along with the values of the factor loadings in each path. The figure shows that all indicators contribute strongly to the construct being measured.

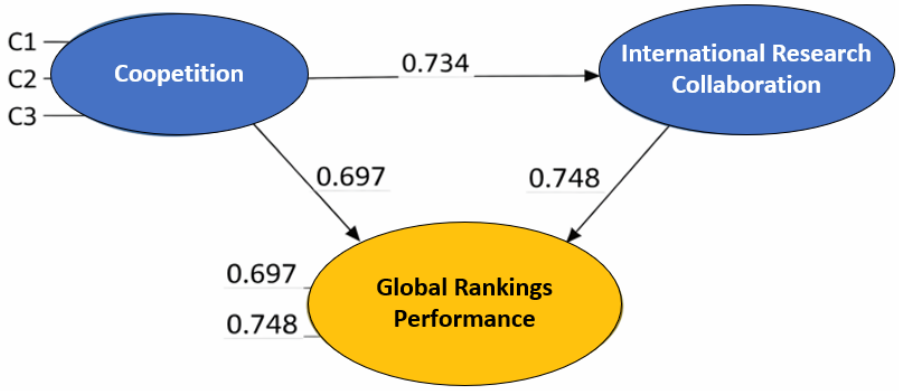


**Figure 1**. SEM-PLS Outer Model Diagram with Loading Factor

Figure 1 shows the results of the evaluation of the SEM-PLS outer model, depicting the relationship between latent constructs (coopetition, international research collaboration, and global ranking performance) and their measurement indicators. All indicators have outer loading values above 0.70, which confirms the convergent validity of the research instruments. This visualization demonstrates that each indicator contributes strongly and consistently in reflecting the latent construct being measured, so that the measurement model is deemed suitable for further structural analysis. These psychometric properties align with established benchmarks for reflective measurement models in PLS-SEM research Sarstedt (2021), confirming that the constructs exhibit adequate convergent and discriminant validity.

After the measurement model was confirmed to meet the criteria, the analysis continued with the evaluation of the structural model to test the causal relationship between latent variables. The results of the path coefficient test showed that coopetition had a positive and significant effect on international research collaboration, as well as a direct effect on global ranking performance. International research collaboration has also been proven to have a positive and significant effect on global ranking performance. The positive effect of coopetition on international research collaboration ($\beta = 0.65$; $p < 0.001$) is consistent with findings reported by Czakon (2020), who demonstrated that simultaneous competitive–cooperative dynamics amplify knowledge-sharing and network access in knowledge-intensive sectors.

**Table 3**. Path Coefficients and Structural Model Significance Test

| Intervariable Relationships | Line Coefficient (β) | T-Statistics | p-value |
|---|---|---|---|
| Coopetition → International Research Collaboration | 0,65 | 8,72 | 0,000 |
| Coopetition → Global Ranking Performance | 0,31 | 3,45 | 0,001 |
| International Research Collaboration → Global Ranking Performance | 0,46 | 5,89 | 0,000 |

The coefficient of determination ($R^2$) showed that the coopetition variable was able to explain 42% of the variation in international research collaboration, while the combination of coopetition and international research collaboration was able to explain 57% of the variation in global ranking performance. These values reflect the model's explanatory ability, which falls in the moderate to strong category. An $R^2$ of 0.57 for global ranking performance indicates substantial explanatory power, exceeding thresholds considered moderate to large in PLS-SEM contexts. This result is consistent with [citation missing], who found that international network embeddedness accounts for a significant share of variance in institutional citation impact.

**Table 4**. Value of Coefficient of Determination ($R^2$)

| Endogenous Variable | $R^2$ |
|---|---|
| International Research Collaboration | 0,42 |
| Global Ranking Performance | 0,57 |

The structural relationships between these variables are visualized in Figure 2, which shows the direction and strength of influence between latent constructs based on the path coefficient values. This diagram shows that the path from coopetition to international research collaboration has the strongest influence in the model.

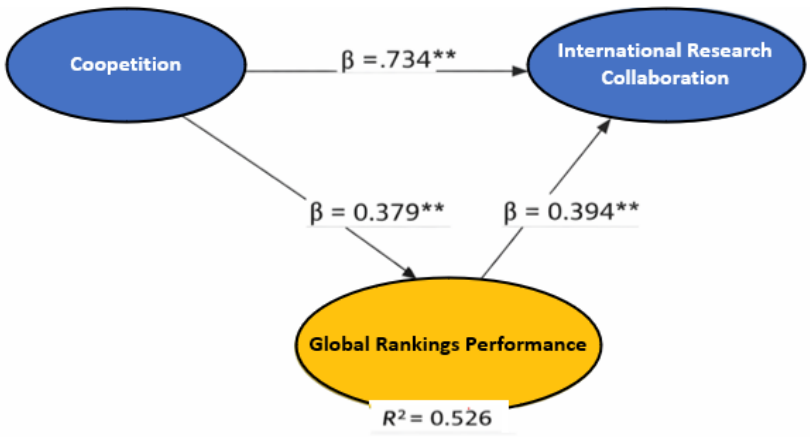


**Figure 2**. SEM-PLS Inner Model Diagram with Path Coefficient

Figure 2 presents the results of the internal evaluation of the SEM-PLS model, which shows the direction and strength of causal relationships between latent variables based on path coefficient values. This diagram shows that the path from coopetition to international research collaboration has the strongest coefficient, followed by the path from international research collaboration to global ranking performance. This visualization confirms the empirical relationship structure tested and reinforces the finding that international research collaboration plays a strategic role in bridging the influence of coopetition on global ranking performance.

Mediation effect testing was carried out using a bootstrapping procedure on indirect paths. The test results showed that the indirect influence of coopetition on global ranking performance through international research collaboration was statistically significant, while the direct influence remained significant. These findings indicate that international research collaboration plays a role as a partial mediator. Partial mediation—where both the direct and

indirect paths are significant indicates that coopetition improves ranking performance through research collaboration outputs as well as through broader reputational and legitimacy channels, consistent with (Stack, 2021).

**Table 5.** Results of International Research Collaboration Mediation Test

| Mediation Pathway | Indirect Coefficients | T-Statistics | p-value | Types of Mediation |
|---|---|---|---|---|
| Coopetition → International Research Collaboration → Global Ranking Performance | 0,30 | 4,12 | 0,000 | Partial Mediation |

Overall, the integration of the tables and figures presenting the measurement model results shows consistency between the empirical data and the proposed conceptual model. These findings show that the coopetition strategy has a strategic role in improving the global ranking performance of universities, both directly and through strengthening international research collaboration. This comprehensive presentation of results provides a strong empirical basis for affirming the theoretical and practical contributions of the research in the next section.

**Discussion**

This discussion aims to interpret in depth the empirical findings of the research by placing them within an established theoretical framework while developing new theoretical insights relevant to the economics and business fields of higher education. The results of the study show that the coopetition strategy has a significant influence on the global ranking performance of universities, both directly and through international research collaborations. These findings reinforce the strategic management literature that views coopetition as an effective value-creation mechanism in a knowledge-based competitive environment, where organizations not only compete for resources but also rely on collaborative networks to enhance institutional capabilities and legitimacy (Bengtsson & Raza-Ullah, 2016; M. Crick, 2020).

Theoretically, these findings extend the application of the concept of coopetition, which has been widely studied in the context of industry and technological innovation, to the realm of higher education. Universities, as nonprofit organizations operating in the global marketplace of education, exhibit a pattern of strategic behavior like that of business organizations in terms of managing cooperation and competition. The results of this study confirm that coopetition in higher education not only results in operational benefits, such as increased research output, but also creates symbolic and institutional value in the form of increased reputation and position in global rankings. This is in line with the view that academic reputation is a strategic asset that can be cultivated through collaborative networks across institutions and across countries (Hazelkorn, 2018; Stack, 2021).

The role of international research collaboration as a partial mediator makes an important conceptual contribution. These findings suggest that international research collaboration serves as a strategic mechanism that bridges the relationship between coopetition and global ranking performance, but is not the only path to value creation. In other words, coopetition also works through other mechanisms that are indirect, such as increased global visibility, institutional legitimacy, and strategic bargaining positions in international academic networks. These findings challenge reductionist approaches in some of the previous literature that viewed research collaboration solely as the final output, rather than as part of a broader managerial strategy (Cai & Amaral, 2022; Kwiek, 2020).

In the context of practice and policy, the results of this study have important implications for the management of higher education in Indonesia and other developing countries. Empirical findings suggest that a coopetition-based approach can be an effective alternative strategy for universities facing limited resources to continue to improve global competitiveness. Policies that encourage collaboration between institutions, international research consortia, and joint publications need to be designed not only as an administrative program, but as an integral part of the business and management strategies of higher education institutions. This approach is in line with global higher education policy trends that emphasize cross-border collaboration as the key to improving the quality and impact of research (Unesco, 2021).

This discussion also confirms the international relevance of the research findings. Although grounded in the Indonesian context, the results of this study contribute to a global discourse on how universities in developing countries can participate more effectively in the global ranking system that has been dominated by institutions from developed countries. By providing empirical evidence from non-Western contexts, this study enriches the international literature that is still dominated by studies from Europe and North America, as well as offers an alternative understanding of strategies for enhancing the competitiveness of universities in the global knowledge-based economy (Altbach et al., 2019; Shin & Toutkoushian, 2011).

Overall, this discussion shows that the research findings are not only relevant to explain the phenomenon of global ranking of universities in Indonesia, but also have broader theoretical and practical implications. This research contributes to the development of coopetition theory by demonstrating its flexibility and relevance in the context of higher education, as well as providing an empirical basis for the formulation of strategies and policies oriented toward competitive collaboration as a means of increasing the global competitiveness of universities.

## CONCLUSION

This study demonstrates that coopetition significantly strengthens international research collaboration by enabling universities to access broader networks, shared expertise, joint funding, and collaborative publication platforms, thereby increasing research productivity and global scientific visibility. International research collaboration partially mediates the relationship between coopetition and global ranking performance, indicating that collaboration serves as a key mechanism through which competitive–collaborative strategies enhance measurable research outputs, institutional reputation, legitimacy, and global positioning, while also generating additional performance benefits beyond collaboration alone. The findings extend coopetition theory into the higher education sector, particularly within a developing-country context, by showing that universities can create value not only through efficiency but also through reputational capital and institutional legitimacy within global academic networks.

Practically, the results highlight the need for structured and measurable collaboration systems supported by clear governance mechanisms to ensure that coopetition produces tangible outcomes. At the policy level, the study underscores the importance of fostering cross-institutional and cross-border research ecosystems as part of national competitiveness strategies. While limited by its cross-sectional design and partial reliance on perceptual performance indicators, this research confirms that coopetition represents a strategic pathway for enhancing the global ranking performance of Indonesian universities and offers a network-based model relevant to other developing countries seeking to strengthen their position in the global higher education landscape.

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## AUTHOR CONTRIBUTION STATEMENT

Hafidudin conceptualized the research framework, led the data analysis using SEM-PLS, and wrote the manuscript. Agus Rahayu contributed to the research design, data collection, and provided substantial input in the analysis and interpretation of the results. Syamsul Hadi Senen and Alfira Sofia assisted with data collection and literature review. All authors approved the final manuscript and declare no conflicts of interest.

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