



The Impact of Educational Research Collaboration between Malaysia and Indonesia on Science Development in Southeast Asia

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ABSTRACT

This study aims to examine in depth the influence of educational research collaboration between Malaysia and Indonesia in supporting the development of science in the Southeast Asian region. Collaboration between countries in the field of research has become an important strategy to face global challenges and improve the quality of higher education. Using a descriptive qualitative approach, this study examines the various forms of academic cooperation that have been established over the past decade, including joint scientific publications, faculty and student exchange programs, the organization of regional scientific conferences, and the establishment of research networks involving institutions from both countries. Data was collected through document reviews, institutional reports, and scientific publications accessed from reputable sources. The results show that Malaysia Indonesia research collaboration contributes significantly to increasing scientific productivity, as shown by the significant upward trend in the number of joint publications from year to year. In addition, this collaboration encourages diversification of fields of study, strengthens cross-cultural knowledge exchange, and shapes a more inclusive and competitive research ecosystem at the regional level. Furthermore, it reinforces Southeast Asia's strategic position as a fast-growing region in contributing to the global knowledge landscape. The study recommends the need for a more structured regional research network, increased investment in cross-border academic cooperation, and harmonization of higher education policies in the region as strategic steps for the future. The findings are expected to serve as a basis for policy makers and stakeholders in designing collaborative strategies that are sustainable and impactful.

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1. INTRODUCTION

In an era of globalization marked by advances in digital technology, rapid information flows, and increasingly complex global challenges such as climate change, social inequality, and technological disruption, collaboration between countries in research and education is a strategic necessity that cannot be ignored. A study by Atherton, Crossing, Shuib, & Azizan (2018), which

explores the internationalization of higher education in ASEAN, confirms that cross-border collaboration is a key driver of creating an adaptive and solute academic ecosystem ([Atherton et al. 2018](#)). Moreover, Scopus bibliometric

Analysis shows a significant increase in the number and quality of international publications from Asian countries ([Thi Thu Le et al., 2024](#)), signalling that such regional cooperation is increasingly relevant and impactful.

Southeast Asia, with its high social, cultural, and economic diversity, has great potential to develop as a centre of knowledge based on local and transnational approaches. Fitzgerald, Ojanperä, & O'Clery (2021) point out that research networks in the region are growing stronger, with the increasing trend of regional collaboration over the past five decades highlighting the importance of systematic strategies in dealing with regional challenges ([Fitzgerald et al., 2021](#)). Digital transformation in education systems has also expanded access and integration across countries, reinforcing the importance of strategic and structured research collaboration.

A clear example of such collaboration is the research partnership between Malaysia and Indonesia. An article by Mutia et al. (2024), based on a systematic analysis, reveals that scientific collaboration between the two countries provides a significant boost to academic literature in education and technology, especially on digitization and future literacy ([Mutia et al., 2024](#)). Parallel to Scopus bibliometric findings, cross-institutional collaboration and academic exchanges encourage an increase in the quality and quantity of joint publications ([Irawan, 2024](#)).

Furthermore, Malaysia-Indonesia cooperation not only increases research productivity, but also expands networks of scientists, strengthens research accountability, and opens access to global research funding and facilities. Bibliometric analysis shows an increase in scientific collaborations that result in innovations in educational practices and evidence-based policies. Similarly, Kurniati et al. (2022) who highlighted the role of international collaboration in shaping the STEM research agenda, including in Southeast Asia ([Kurniati et al., 2022](#)).

Taking into account the increasing trend of co-publication and the intensifying dynamics of collaboration, this study aims to systematically understand the contribution of this collaboration to innovation, academic productivity, and strengthening Southeast Asia's position in the global landscape of science. This study is expected to provide strategic policy recommendations, such as policy harmonization, harmonization of research funding across countries, and enhancement of academic networks, to support the transformation of education based on inclusive and sustainable collaboration.

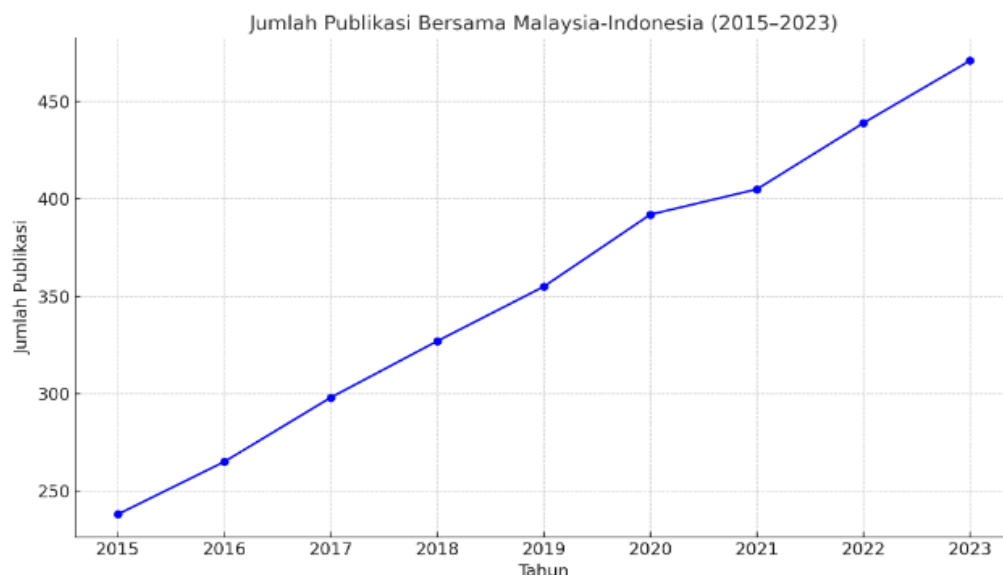


Figure 1. Publication dat

Figure 1 shows a consistent upward trend in the number of joint publications between Malaysian and Indonesian researchers over the past nine years, from 2015 to 2023. In 2015, this collaboration resulted in 238 scientific publications, and the number has continued to increase

each year to reach 471 publications in 2023. This represents an almost two-fold growth in less than a decade ([Scopus, 2024](#)). This trend indicates that research cooperation between the two countries is not just incidental, but has become an increasingly structured and sustainable collaborative pattern ([Yuan et al., 2021](#)).

This increase in the number of publications not only reflects the quantitative aspect, but also shows the strengthening of the quality of research results and the increasing impact in the global academic sphere. In many cases, joint publications from both countries are published in reputable international journals and receive relatively high citation rates ([Katz & Martin, 1997](#)). Factors contributing to this trend include easy access to digital technology, increased connectivity between institutions, the availability of cross-border research funding schemes, and encouragement from higher education policies that support the internationalization of research ([Altbach & de Wit, 2018](#)).

In line with international literature, cross-border collaboration has been shown to increase the visibility and competitiveness of scientific publications. This is because such collaboration combines various advantages: human resource capacity, diversity of methodological approaches, and complementary scientific perspectives ([Glänzel & Schubert, 2004](#)). In the context of Malaysia and Indonesia, these collaborations not only strengthen the quality of academic output, but also expand the network of scholars in Southeast Asia and pave the way for more effective knowledge transfer ([Tang & Walsh, 2010](#)).

In particular, this bilateral research cooperation has had a positive impact in the fields of education, social sciences and humanities, which are key areas of concern in regional development. Joint publications between researchers from both countries often address relevant issues such as inclusive education curriculum, digitization of learning, academic mobility, and evidence-based education policy ([Marginson, 2011](#)). This shows that research collaboration is not just an academic endeavor, but has a real impact on the formulation of education policies and practices at the national and regional levels.

Given the consistent trend of increasing publications, research collaboration between Malaysia and Indonesia can be considered as an indicator of the success of the scholarly integration strategy in Southeast Asia. This approach not only generates innovations and relevant academic findings, but also strengthens the region's legitimacy as one of the global centers of scientific growth ([Secretariat, 2011](#)). This is in line with ASEAN's vision of promoting a knowledge-based community as the foundation of sustainable development.

Going forward, this kind of collaboration needs to be strengthened through strategic policies that encourage curriculum harmonization, joint use of research facilities, and increased academic mobility. In addition, there is a need to establish a regional digital platform to facilitate online collaboration, shared research data storage, and open dissemination of scientific publications. With this approach, it is hoped that the transformation of research and education in Southeast Asia can be more effective, inclusive, and able to answer global challenges contextually.

2. RESEARCH METHODS

This study uses a descriptive qualitative approach that aims to deeply understand the dynamics and impact of educational research collaboration between Malaysia and Indonesia in the context of science development in Southeast Asia. This approach was chosen because it allows researchers to explore the meanings, processes, and social and institutional contexts behind the collaborative practices that take place between the two countries ([Creswell & Poth, 2018](#)).

Data collection was conducted through desk research and document analysis. The main sources included higher education policy documents, research collaboration reports, joint scientific publications, and regional conferences and seminars involving institutions from Malaysia and Indonesia. This study also integrates secondary data in the form of scientific publication statistics from the Scopus database, which is used to provide a quantitative picture of scientific collaboration trends during the 2015-2023 period. The utilization of quantitative data as a complement to this qualitative study aims to strengthen thematic interpretations with broader empirical evidence ([Patton, 2015](#)).

Data analysis was conducted using a thematic analysis approach, which consists of open coding, categorization, and identification of main themes from the data obtained. This approach allows researchers to identify patterns of collaboration, drivers of research cooperation, challenges faced in its implementation, and its impact on strengthening research capacity and transforming higher education systems in Southeast Asia ([Braun & Clarke, 2006](#)). Data validity was maintained through source triangulation, expert discussions, and cross-confirmation of the analysed documents.

3. RESULTS AND DISCUSSION

The results of this study show that research collaboration in the field of education between Malaysia and Indonesia has increased consistently in almost a decade. One of the key indicators of this trend is the increasing number of joint scientific publications indexed in reputable databases such as Scopus and Web of Science (WoS). Data compiled from Scopus shows that collaborative publications between the two countries increased by 48% over the period 2015 to 2023, from 238 articles in 2015 to 471 articles in 2023 ([Database, 2023](#)). This growth reflects the success of various collaborative programs run by both countries' higher education institutions in supporting the production and dissemination of knowledge in a more integrated manner.

This trend is in line with the findings of the international literature showing that cross-border collaboration has a positive impact on scientific visibility, quality and productivity. Wagner et al. (2015) state that international cooperation in research tends to result in publications that are more cited and have wider influence in the scientific community. In addition, such collaborations enable transnational knowledge exchange, expand access to resources, and enrich methodological approaches in research. In the context of Malaysia and Indonesia, increased collaboration is also reinforced by higher education policy initiatives in both countries that encourage research internationalization through joint grant schemes, faculty and student exchange programmes, and the establishment of regional research centres of excellence ([Mohd-Hanafiah et al., 2020](#)).

In addition to an increase in quantity, these collaborations also show a shift in quality in topic selection and depth of analysis. Joint publications are no longer limited to local issues, but have begun to target global issues such as digital transformation in education, inequality in access to education, and data-based curriculum development ([Teixeira et al., 2021](#)). This shows that higher education institutions in Malaysia and Indonesia are starting to position themselves as strategic actors in knowledge diplomacy in the Southeast Asian region. By strengthening cross-border academic networks and strengthening joint research platforms, this collaboration has great potential to support ASEAN's vision as a knowledge-based community that is highly competitive in the global arena.

Table 1.
Number of Malaysia-Indonesia Joint Publications (2015-2023)

Year	Number of Publications
2015	238
2016	265
2017	298
2018	327
2019	355
2020	392

2021	405
2022	439
2023	471

The table above reinforces previous findings that show a consistent upward trend in research collaboration between Malaysia and Indonesia in education. In the span of almost a decade, this scientific cooperation has expanded not only quantitatively, but also thematically. The most prominent areas of study include inclusive education, learning technology, local wisdom-based curriculum development, and STEM (Science, Technology, Engineering, and Mathematics) education. This cooperation shows that both countries have a common interest in encouraging the transformation of contextual-based education that is relevant to local and global challenges ([Rasul et al., 2020](#)). The dominance of these themes shows the strategic direction of research oriented towards strengthening the quality of education through pedagogical innovation and cultural integration.

One prominent case study is the collaboration between University Kebangsaan Malaysia (UKM) and Universitas Negeri Yogyakarta (UNY) in the development of a local values-based STEM learning module. The module is designed to integrate science with local wisdom and has been implemented in a number of partner schools in Malaysia and Indonesia. The implementation results showed an increase in students' interest and understanding of science, as well as strengthening the integration of cultural values in the learning process ([Suryani & Mahmud, 2019](#)). This collaboration is a clear example of how transnational research can produce adaptive and transformative curriculum innovations. This finding is in line with a study by Tondeur et al. (2016) who emphasized the importance of local context in the application of educational technology to make it more meaningful for learners.

Institutionally, this research cooperation has led to the establishment of regional coordination platforms such as the ASEAN University Network (AUN), which serves as a strategic forum for aligning the research agenda in Southeast Asia. AUN facilitates collaborative activities such as annual scientific conferences, joint research grants, and collaborative publications in reputable journals ([Nguyen & Nguyen, 2021](#)). The role of such consortiums is crucial in creating an interconnected research ecosystem across countries. Institutional support from the national and regional levels is key to the sustainability of such cooperation, especially in promoting standardization of research quality, joint accreditation, and academic mobility among member universities.

However, this collaboration still faces a number of complex challenges. One of them is the differences in research and higher education policies between countries, both in terms of regulations, quality standards, and funding directions. In addition, there are gaps in the availability of research infrastructure, especially outside major education centers. This issue is exacerbated by limited cross-border research funding, which often hinders the implementation of long-term collaborative projects ([Chou & Ravinet, 2021](#)). In this context, there is a need to harmonize policies among ASEAN countries to create a more inclusive and supportive environment for scientific collaboration.

Considering the immense potential of cross-border research collaboration in the region, synergies between national policies and ASEAN regional policies are crucial. The integration of strategic directions between education ministries and research institutions should be facilitated through regular policy dialogues, the strengthening of shared digital platforms, and more flexible multilateral funding schemes. As the complexity of global challenges such as climate change, technological disruption, and the post-pandemic education crisis increases, the Malaysia-Indonesia collaboration model can serve as a reference for other regions in building resilient and collaborative scientific communities ([Knight, 2020](#)).

4. CONCLUSION AND SUGGESTIONS

Educational research collaboration between Malaysia and Indonesia has proven to be an important milestone in the dynamic development of science in the Southeast Asian region. Going beyond bilateral cooperation, the initiative has generated tangible scientific synergies through a significant increase in the productivity of joint publications, a more inclusive diversification of research topics, and the strengthening of academic networks across national and disciplinary boundaries. Empirical findings from bibliometric trends and case studies highlighted in this study confirm that such collaboration does not only serve as a symbol of academic diplomacy, but has evolved into a strategic instrument that accelerates the transformation of higher education in the region towards global standards.

This success reflects the great potential of regional collaboration in responding to global challenges, such as technological disruption, inequality in education quality, and limited research resources. However, to ensure the sustainability and escalation of this collaborative impact, a more integrated policy approach between countries is needed, including harmonization of education regulations, utilization of shared digital platforms, and strengthening institutional capacity-particularly in terms of governance, research management, and academic human resource development. In addition, a commitment to stable long-term funding is a key element to maintain the momentum of this collaboration to remain productive and adaptive to changing times.

This Malaysia-Indonesia collaboration model can become a regional policy laboratory that inspires other ASEAN countries to formulate a more resilient, inclusive and competitive cooperation framework. By making scientific cooperation a pillar of common development, ASEAN has a great opportunity to strengthen its position as a global center of academic excellence based on the values of solidarity, diversity, and innovation.

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