

Mapping Innovative Human Resources in Economic and Business Development: A Bibliometric Analysis of Scopus Publications in East Kalimantan

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Abstract

Objective: To explore and identify the development stages of sustainable development and to examine the pace of human resource development in economic and business topics in East Kalimantan.

Design/Methods/Approach: Bibliometric analysis using the Scopus database from 1979 to 2026, synthesising a total of 681 articles.

Findings: There is an increasing number of reputable Scopus publications by East Kalimantan researchers focusing on critical topics such as biodiversity, forestry, and conservation. Active local researchers are collaborating with global networks, with Universitas Mulawarman emerging as the leading institution. The study identified 10 thematic clusters, revealing that the mining, oil, and gas industries drive innovation as a triple helix solution between research and stakeholders. Furthermore, innovative human resource development coexists with the increasing dynamics of economic and business development.

Originality/Value: This study offers a novel contribution by applying a comprehensive bibliometric analysis and PRISMA guidelines specifically focused on human resource development within the economic and business landscape of East Kalimantan, a context that has not been extensively mapped in previous literature.

Practical/Policy implication: The increasing dynamics of economic and business development create environmental issues—such as climate change, deforestation, ecological damage, and pollution—that require constructive solutions and sustainable development strategies.

Keywords: East Kalimantan; Bibliometric Analysis; Scopus; Dynamics

Abstrak

Tujuan: Untuk mengeksplorasi dan mengidentifikasi tahap-tahap pembangunan berkelanjutan serta menguji laju pengembangan sumber daya manusia dalam topik ekonomi dan bisnis di Kalimantan Timur.

Desain/Metode/Pendekatan: Analisis bibliometrik menggunakan pangkalan data Scopus dari tahun 1979 hingga 2026, dengan menyintesis sebanyak 681 artikel.

Temuan: Terdapat peningkatan jumlah publikasi Scopus bereputasi oleh peneliti Kalimantan Timur yang berfokus pada topik-topik kritis seperti keanekaragaman hayati, kehutanan, dan konservasi. Peneliti lokal aktif berkolaborasi dengan jaringan global, dan Universitas Mulawarman muncul sebagai institusi terdepan. Studi ini mengidentifikasi 10 kluster tematik, yang menunjukkan bahwa industri pertambangan, minyak, dan gas mendorong inovasi sebagai solusi *triple helix* antara pihak penelitian dan pemangku kepentingan. Selain itu, pengembangan sumber daya manusia yang inovatif berjalan beriringan dengan meningkatnya dinamika pembangunan ekonomi dan bisnis.

Orisinalitas/Nilai: Studi ini memberikan kontribusi yang orisinal sebagai penelitian yang menerapkan analisis bibliometrik komprehensif dan panduan PRISMA, yang secara khusus difokuskan pada pengembangan sumber daya manusia dalam lanskap ekonomi dan bisnis di Kalimantan Timur, sebuah konteks yang belum dipetakan secara mendalam pada literatur sebelumnya.

Implikasi kebijakan: Meningkatnya dinamika pembangunan ekonomi dan bisnis menciptakan masalah lingkungan—seperti perubahan iklim, deforestasi, kerusakan ekologis, dan polusi—yang secara praktis dan kebijakan membutuhkan solusi yang konstruktif serta strategi pembangunan berkelanjutan.

Kata Kunci: Kalimantan Timur; Analisis Bibliometrik; Scopus; Dinamika

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Introduction

East Kalimantan, as a growing province in eastern Indonesia, strives to expand the economic and social development function to its communities across the region. The balance between economic sustenance and welfare can be achieved through a sustainable development orientation. [East Kalimantan Provincial Government \(2025a\)](#) expanded its efforts to improve both sectors through efficient, effective targeting and stakeholder collaborations. The progress and involvement of human capacity and capabilities in the East Kalimantan situation remain the most significant drivers and enablers of the pace of such development within economic approaches. However, [East Kalimantan Provincial Statistics Agency \(2025\)](#) reiterated that the quality of human capital development continues to improve. The indication of such dynamics relies on higher education quality as a locomotive for educational sustainability. The local authority, through the East Kalimantan Provincial Government (2025b), attempted to coordinate economic development efforts by involving universities based in East Kalimantan.

The central focus of human resource capacity lies in innovation through higher education, as indicated and measured by research productivity. Higher education at university institutions plays a significant role in knowledge production that is applicable to economic development. In the context of regional development in East Kalimantan, [Basri et al. \(2024\)](#) explained that Scopus-based publications could strengthen the region's innovation capacity, supporting sustainable development. Human resource efficiency, effective management, and its intellectual cultural tradition, to the best of their efforts, might foster institutional performance and academically orientated output through publication ([Kisahwan et al., 2025](#)). Thus, higher education in East Kalimantan, in conjunction with government economic agendas and sustainable development, should focus on access to education and the creation of new knowledge and innovation ([Gill et al., 2022](#)). In the modern context, [Astarani et al. \(2024\)](#) elucidated regional economic development through reputable publications in Scopus, suggesting that knowledge creation could enhance educational capacity within society, including in the case of East Kalimantan.

The university functions as a centre for human resource development, innovation, and creativity, giving rise to new ideas and breakthroughs among East Kalimantan societies. Examining the progress and recent developments of university-affiliated researchers and authors regarding economic development keywords may lead to a better understanding of the necessary next steps for the future. The development of logical thinking, scholarly creativity, and human resource capacity through higher education can significantly impact the society of East Kalimantan. Higher quality of education in East Kalimantan through sufficient research funding makes for productivity of academic research on Scopus-indexed publications, leading to the inclination towards a knowledge-based economy. [López-Rubio et al. \(2020\)](#) argued that innovation systems, knowledge management, and entrepreneurial ecosystems serve as indicators of innovative development that can be measured through the progress and achievements documented in reputable databases. The publication was expected to be referred to as an innovative economic solution that connects research-based problems to community solutions, improving the quality of human life and wellbeing, and suggesting the continuous link between the university and stakeholders ([Winters, 2011](#)).

This study aims to examine the scientific patterns of economic and business development research in East Kalimantan by examining publication trends, identifying key contributors, mapping thematic research clusters, and evaluating how the literature reflects innovative human resources and knowledge-based regional development. The study addresses the following research questions:

1. What are the publication trends related to economic and business development in East Kalimantan?
2. Who are the major contributors (authors and institutions) in this research field of East Kalimantan?
3. What thematic clusters characterise the scientific literature on economic and business development in East Kalimantan?
4. How does this research theme reflect the development of innovative human resources and knowledge-based regional development?

Literature Review

The Relationship Between Innovative Human Resources and Economic and Business Development

The regional development, innovation, and performance depend on the interaction of technological capabilities, institutional structures, knowledge networks, and innovative ecosystems, which are facilitated through measurable and quality publishable outcomes ([Samara et al., 2024](#)). Despite the paradigm centrality, the results from such multiple perspectives inside the economic, management, and business orientations encourage multidimensional approaches to understanding the educational roles of higher education research

for social progress and sustainability (Leoni, 2025), particularly in how these roles can contribute to addressing societal challenges and fostering sustainable development initiatives. To execute such idealism, universities, as higher learning centres for innovative human resources, according to Eimer & Bohndick (2023), must clarify their conceptual understanding of employability before implementing educational programs. Employability models can serve as frameworks for curriculum design, career education, and policy development.

Human resources and innovation in the modern context of development, responding to global technological advancement, had to incorporate digitalisation issues, such as data analytics, management of technological adaptation, and ethical data use, to cope with the professional, technology-driven environment (van Beurden et al., 2024). The process of human resources development through higher education in business, economics, and management is ensured by quality assurance mechanisms, including accreditation and rankings, which are shaping global convergence in university governance, in which publication output through reputable databases remains a significant criterion (Guil Gorostidi & Rubio-Arostegui, 2026). The new, innovative approaches in human resources and their growing importance are frequently examined and investigated through high-quality research that involves thorough peer review. Thus, strategic human resource policies could begin with training and the transfer of knowledge and skills developed and controlled through new knowledge creation (Allui & Sahni, 2016). Using a systematic review, Cayrat & Boxall (2023) reasserted that the comprehensive and integrative development of innovative human resources, measured through the core university functions of knowledge production and problem-solving, could enhance regional societal development. Thus, the triple helix concept, which involves collaboration between government, universities, and businesses, can pave the way for economic and business development.

Bibliometric Trends in Innovative Human Resource Research

Cayrat & Boxall (2023) elucidated that the research-based innovation could develop the human resource function, continuing to upgrade the solution facing enduring role tensions. In addition, structural constraints highlight the need for integrative approaches that combine strategic, operational, and employee-oriented functions. The comprehensive bibliometric study on human resources development in relation to contextual problems attempts to address the innovative solution through quality research, whose outcome can be used for the triple helix community. Universities play a crucial role in generating human capital through research and training by producing scientific publications, generating knowledge and innovation, and developing skilled human resources that support organisational and economic development (Danvila-del-Valle et al., 2019). Similarly, these arguments were corroborated by Mohamed et al. (2024), who explained that higher educational performance is reflected in scientific publications that enable universities to contribute to producing academic research, developing human capital, advancing knowledge and innovation, and improving organisational and economic performance. Rana and Sachdeva (2025) highlighted that universities have been essential actors in developing human resource analytics research, facilitating the production of scientific publications, developing analytical and digital skills, conducting research on human capital and workforce analytics, and supporting organisational and economic development.

Data and Research Methods

The principle of research methodology must uphold a systematic and transparent process involving the comprehensive stages (Creswell John & David, 2023). A bibliometric review is considered a systematic review which allows scholars to map the development of scientific knowledge and identify emerging research themes. To execute the bibliometric review, the study must rely on a credible database, which the current study uses the Scopus database. The quality of the article being reviewed becomes the most critical element, as suggested by Page et al. (2021) through PRISMA principles. Those standards ensure the quality of articles in terms of content and structure. The PRISMA 2020 guideline provides a standardised framework for conducting and reporting systematic reviews, engaging methodological rigour and reproducibility through a structured checklist and flow diagram. PRISMA, as an initial screening, enables researchers to systematically identify and analyse scientific publications within a specific field. The PRISMA involves four steps, such as (1) identification and recording of identified articles from databases and other sources, (2) screening and encouraging removal of duplicate records and irrelevant studies, (3) selection of eligibility and full-text assessment of remaining studies, and (4) inclusion of studies into the final list used in the review.

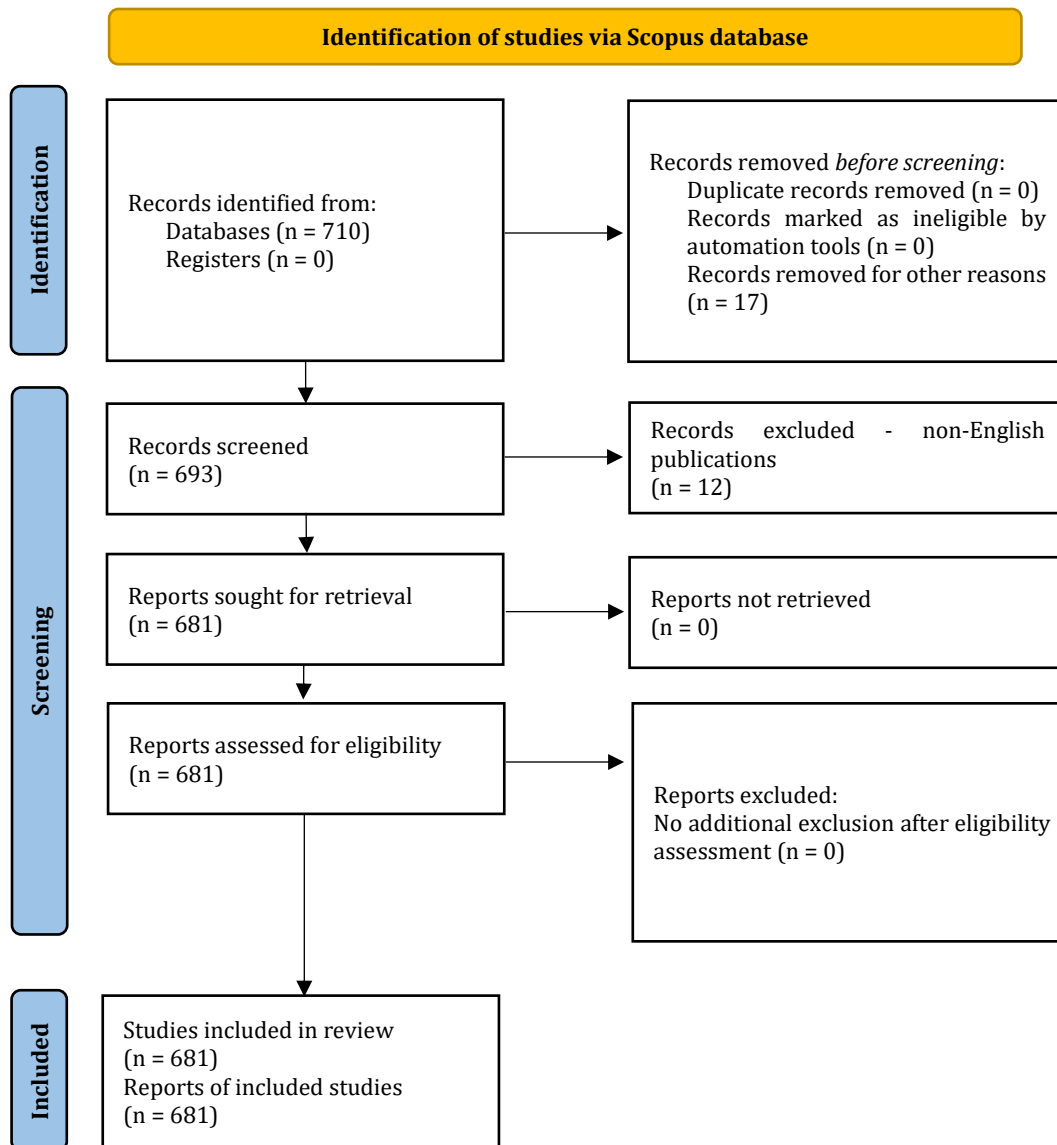


Figure 1. PRISMA 2020 Flow Diagram of Article Selection Process

Bibliometric analysis is typically suitable for quantitative text analysis, in which the study summarises the literature review into statistical results representing the general depiction of patterns. Donthu et al. (2021) explained that bibliometric analysis is particularly meaningful and efficient when there is a large volume of literature, specifically hundreds or thousands of articles. The accumulation makes it difficult for readers to review and understand manually. The objective of the study is to explore and identify measurable and quantifiable texts comprising publication trends, collaboration networks, thematic clusters, and emerging research directions. When applied rigorously, bibliometric studies provide a comprehensive overview of the intellectual structure and evolution of a research field. Technically, the study retrieves initial documents from Scopus for around 710 articles ranging from 1979 to 2026. Accordingly, the author identification screening is conducted to obtain the ostensible authors, resulting in 693 articles. Eventually, the screening involves English language inclusion criteria, with a refined number of articles being recommended to 681 articles for bibliometric study. These procedures are carried out on the Scopus website using the following search string, 'proofs'.

Scopus Keyword Search String	Your query: ((TITLE-ABS-KEY(Economic OR business OR management) AND TITLE-ABS-KEY("East Kalimantan")) AND (EXCLUDE (PREFNAMEAUID,"undefined")) AND (LIMIT-TO (LANGUAGE,"English")))
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The current development of bibliometric reviews incorporates systematic literature reviews that use content analysis strategies to identify the most important topics and themes. [Marzi et al. \(2025\)](#) and [Passas \(2024\)](#) developed the bibliometric systematic review guidelines comprising 7 stages as following protocols. The study with bibliometric characteristics shall fulfil the entire checklist for the better quality of bibliometric findings and analytical interpretations. The complete stage of the bibliometric review needs to be evaluated and realigned with the objectives of the study. [Hoang \(2025\)](#) asserted the VALOUR framework to evaluate the bibliometric study, consisting of verification, alignment, logging, overview, and reproducibility. Those five elements provide a practical guide for conducting the evaluation of bibliometric research.

Table 1: Main Steps for Bibliometric Analysis

No	Steps	Descriptions	Tools/Software	Expected Outcome
1	Identification of research objectives	Clearly describe the objective of the bibliometric analysis through research questions	Creativity	Stated research questions and their objectives
2	Literature search and data collection	Collect relevant literature from credible databases or collect reliable raw data	Mendeley	A complete dataset of respective publications
3	Data cleaning and preprocessing	Clean and preprocess the data to ensure accuracy (e.g., removing duplicates and correcting author names)	Microsoft Excel, OpenRefine	A refined and accurate dataset ready for analysis.
4	Selection of bibliometric techniques	Identify the bibliometric techniques based on research objectives	Vos Viewer, Microsoft Excel	Bibliometric performance, knowledge network
5	Data Analysis	Conduct the analysis using the chosen techniques	Vos Viewer, Microsoft Excel	Insights and patterns in the selected articles
6	Visualization	Depict the results to aid interpretation and presentation	Vos Viewer, Microsoft Excel	Graphs, maps, tables, and other visual representations of data
7	Interpretation and Reporting	Infer, explain the results and prepare a report detailing the findings and their implications	Microsoft Word	Holistic report with insights and recommendations

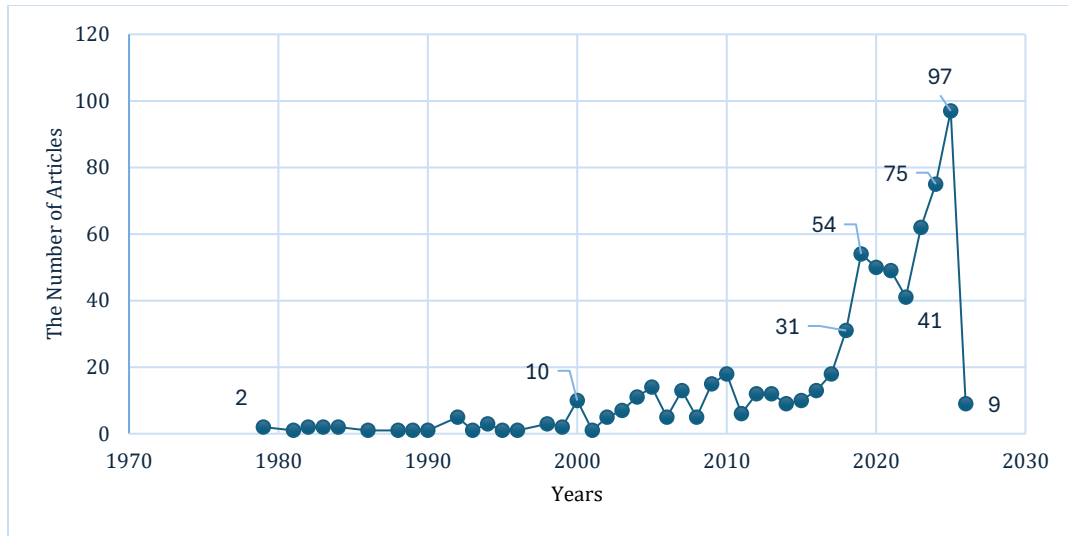
Source: Adaptation from [Page et al. \(2021\)](#) and [Passas \(2024\)](#)

Finding and Discussion

Concerning Researchers or authors affiliated with East Kalimantan institutions and other relevant organisations are depicted with various maps of innovative human resource development using economic, business, and management keywords. The study focuses on answering four research questions detailed in the following subchapters. The structure of the findings and discussion is to align with the bibliometric protocols by [Donthu et al. \(2021\)](#) on performance analysis, science mapping and network analysis. However, such detailed protocols expand to the guidelines being developed by [Marzi et al. \(2025\)](#) and [Passas \(2024\)](#), who integrated bibliometrics with systematic review, as discussed in the following presentation.

The Publication Trends Related to Economic and Business Development in East Kalimantan

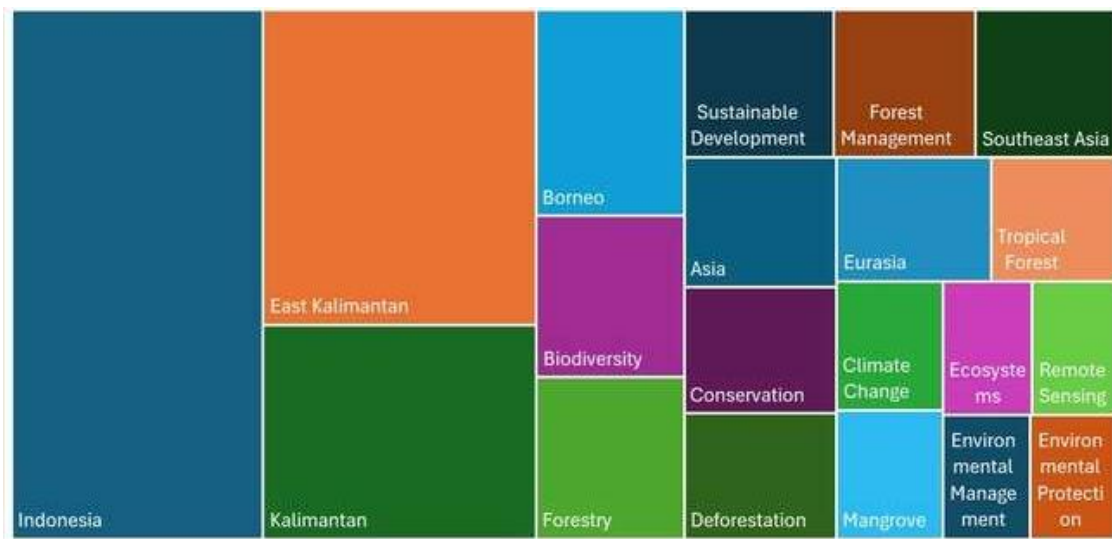
The publication trend for the contextual location of East Kalimantan 's innovative human resources in the Scopus database has gradually fluctuated, with an increasing inclination from 1976 until 2026 (March). This accumulation surges in 2025, with the number of publications of articles and conference papers in the Scopus database rising to 97. The trend of Scopus-based publications then decreased at the beginning of 2026. The Scopus-trending publication has been mandatory for university quality, as discussed by [Basri et al. \(2024\)](#), as an intensive knowledge producer to cope with the Sustainable Development Agenda. The university, as a learning and training centre for economic development and empowerment, is responsible for the newly introduced developments and latest discoveries ([Kisahwan et al., 2025](#); [Gill et al., 2022](#)). As explained by [Astarani et al. \(2024\)](#), the function of knowledge production may drive regional economic development through innovation discovery by universities.



Source: Scopus database, 2026

Figure 2. Publication Trends Related to Economic and Business Development in East Kalimantan Based on Scopus Indexed-Database

The primary keywords for innovative human resources indexed in the Scopus database demonstrate the centrality of Indonesia, East Kalimantan, Kalimantan, Borneo, biodiversity, and forestry, focusing on the connection between aspects of natural conservation and government central gravity. Figure 1 and Figure 2 depict the increasing trends with diverse spectrums of keywords in the Scopus database by researchers and authors in East Kalimantan. The province plays as the epicentre of mining fields, industrial complexes and forest landscapes with a huge range of geographical locations. The keyword also mentions sustainable development and connectivity with other regional places like Southeast Asia and Eurasia. The identification of climate change and deforestation appears to be a prominent topic being discussed by researchers in East Kalimantan. This finding directly discusses the efforts by the East Kalimantan government that strengthen the balance of regional development and the sustainability agenda (East Kalimantan Provincial Government, 2025a; East Kalimantan Provincial Statistics Agency, 2025).



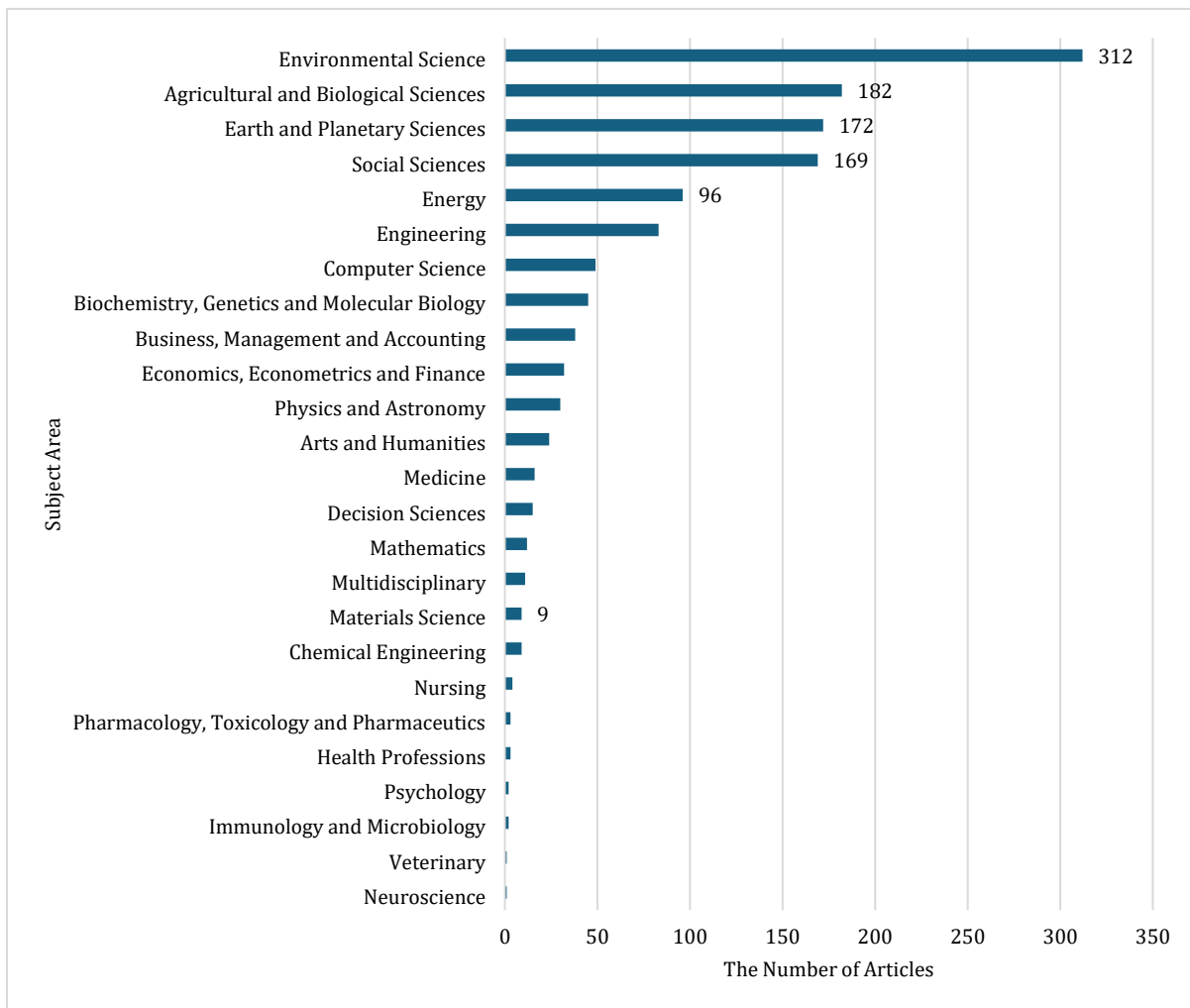
Source: Scopus database, 2026

Figure 3. Publication Trends Related to Economic and Business Development in East Kalimantan Based on Keywords

The publication trend in East Kalimantan, as analysed by authors and researchers affiliated with the province and its networks, is predominantly driven by environmental science, agricultural and biological

sciences, and earth and planetary science. Most articles are associated with the subject areas depicted in Figure 3 below. The relevant subjects of study, such as social science, energy, and engineering, fall under the first cluster of subject areas. This fact shows the potential of East Kalimantan as a natural resource and mining hub, leading to the development of innovative human resources and technological advancement in economic, business, and management development. [East Kalimantan Provincial Government \(2025b\)](#) and [East Kalimantan Provincial Statistics Agency \(2025\)](#) pointed out that the centre for natural resource exploration, like coal, oil, and gas, becoming the topics studied and investigated by researchers publishing Scopus-indexed journals, should preserve the aspects of sustainable development and maintain the ecosystem, environment, and human welfare.

The economic and business potential emerges from the combination of strategic positions, natural resources, and top-down approaches to national capital relocation ([East Kalimantan Provincial Government, 2025a](#)). Therefore, the development of business and management for innovative human resources involves all stakeholders, leading to multidisciplinary action, as depicted in Figures 2 and 3, and highlighting the potential of East Kalimantan as discussed by ([Winters, 2011](#)). The university, as a producer of new knowledge, could create innovative ideas through its human resource capabilities ([Eimer & Bohndick, 2023](#)).

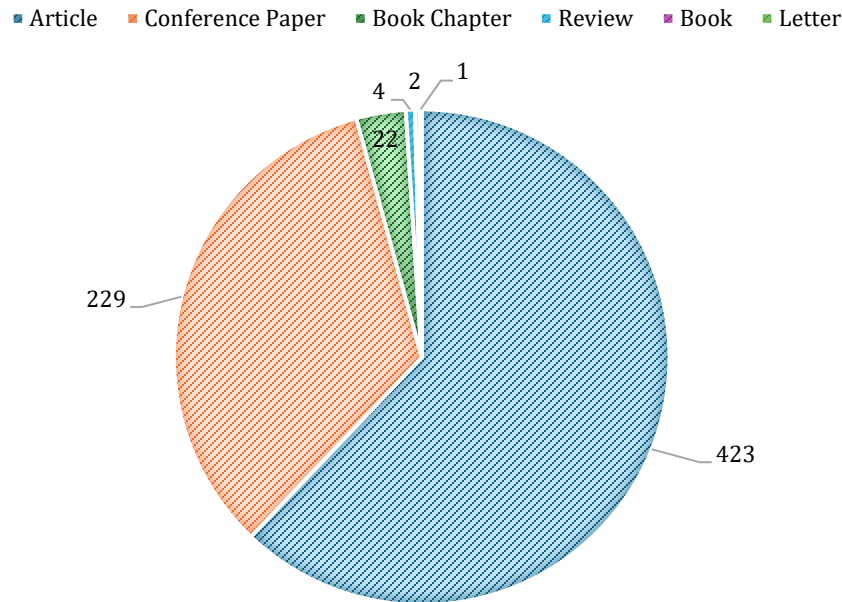


Source: Scopus database, 2026

Figure 4. Publication Trends Related to Economic and Business Development in East Kalimantan Based on Subject Area

The number of 681 articles published in the Scopus database by authors and researchers affiliated with East Kalimantan is satisfactory, covering 423 articles and 229 conference-indexed papers. Most documents are in one of the three main types. The production of knowledge in innovative human resources, as

depicted in Figures 3 and 4, is intended to address industry and real-world problems in East Kalimantan, with the sciences of natural resources and environmental conservation emerging as dominant fields in the Scopus database. The triple helix of skilled researchers operates within live laboratory settings, where the ecosystem of their relevant field determines the research topics. The affiliated researchers in East Kalimantan and their networking partners collaborate to address the mounting problem through innovative human resources and resource-sharing, enabling impactful outputs that include practical solutions and advancements in natural resource management and environmental conservation. As theorised by [van Beurden et al. \(2024\)](#) and [Guil Gorostidi and Rubio-Arostegui \(2026\)](#), digital technology, global networking, and their collaborative actions determine the productivity of human resources in economic and business development, thereby affecting the increasing number of quality research as knowledge management output.



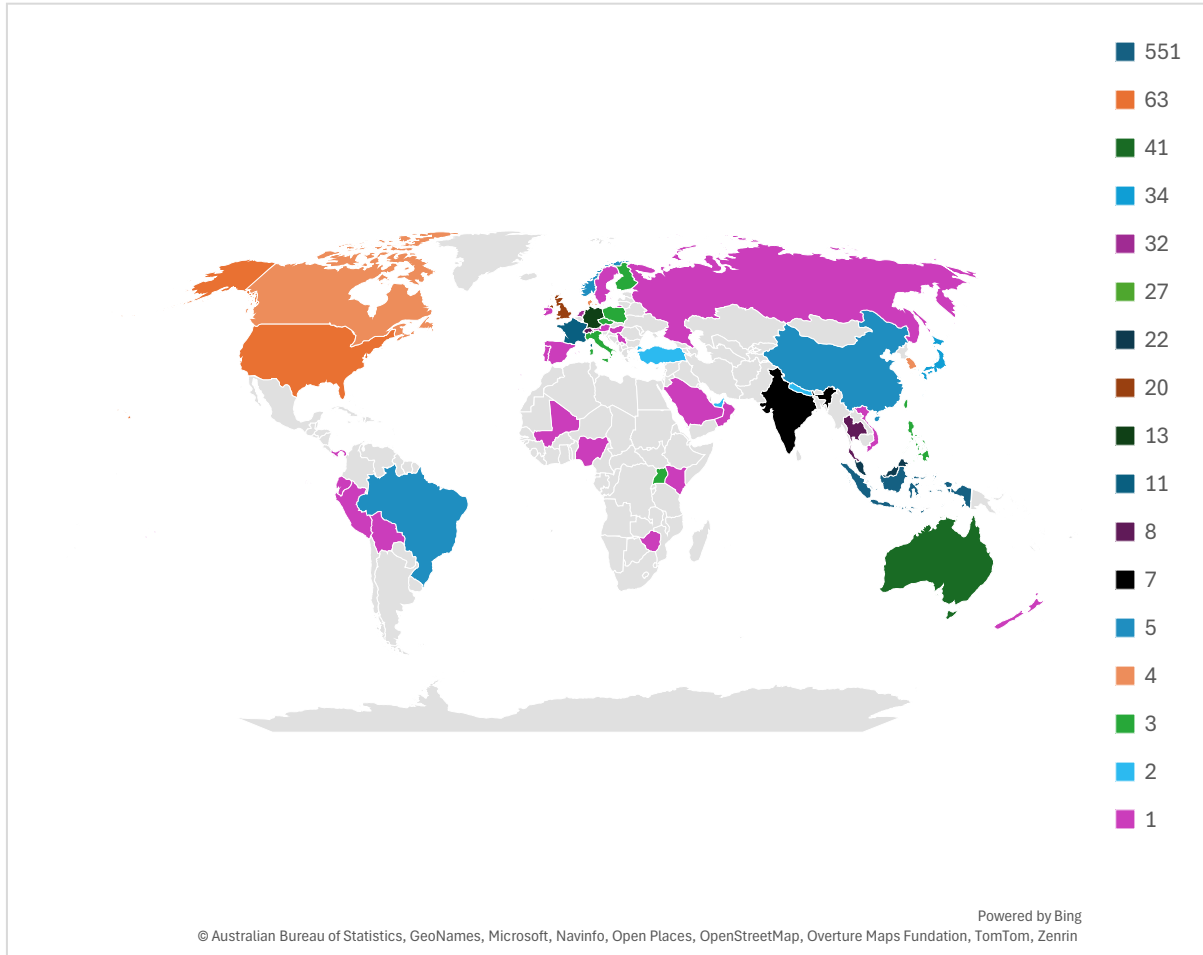
Source: Scopus Database, 2026

Figure 5. Publication Trends Related to Economic and Business Development in East Kalimantan Based on Document Types

The topics of economic and management development in East Kalimantan attract various researchers, with the epicentre within the province being led by local public university researchers. The production of new knowledge as economic backbone development in Figures 1 to 4 is authored and coauthored by networking of local and global scholars across the world. The data shows that Indonesia is the main contributor of articles and their documents indexed in the Scopus database. The researchers across the Indonesian region producing 551 outputs have been interested in the economics and management of East Kalimantan, showing the innovative action of human resources capabilities. The other countries, like the United States, Australia, Japan, and the Netherlands, have produced around 30 to 50 articles in the Scopus database. The rest of the affiliated researchers have contributed fewer than 30 articles per country. Figure 5 depicts the geographical origins of researchers in the economic and business development of East Kalimantan. According to [Allui & Sahni \(2016\)](#), the production of the Scopus database required consistent progress of training, and their output could benefit from retraining and reapplying the human resources through reference-based programmes. This strategic alliance and partnership for innovative contribution could be done through the university's role, facilitating the interconnection and sharing ideas on business development, encouraging human resources improvement ([Cayrat & Boxall, 2023](#)).

The scientific publications indexed in the Scopus database create new frontiers and thematic discussions among researchers in the fields of business and development in East Kalimantan, which can lead to enhanced collaboration and knowledge sharing that benefits both academia and industry. The knowledge production strengthens innovative human resources in the East Kalimantan provinces, so the possibility of

collaboration has been internalised in university functions, pursuing the ranking and accreditation. The productivity results from the interest in potential fields of study, as depicted in Figures 1–4 above, and the need to make greater connections and impact among researchers. The situation of interconnected innovative human resources was reiterated by the previous scholars such [Danvila-del-Valle et al. \(2019\)](#) and [Mohamed et al. \(2024\)](#), stating the transformative human resource development inside university talents for regional development.



Source: Scopus database, 2026

Figure 6. Publication Trends Related to Economic and Business Development in East Kalimantan Based on Country Affiliation

The Major Contributors (Authors and Institutions) In This Research Field of East Kalimantan

The data from Scopus also highlights the leading institution of local higher education for authors and researchers in the field of economic and business development in the East Kalimantan context. The local researcher becomes the innovative enabler for Scopus database development in East Kalimantan, within the range of economic and business development, by actively contributing research that addresses regional challenges and promotes sustainable practices. Leading researchers such as Karyati, Rulim Y., and Kristiningrum R. produce more Scopus documents than others in the field of East Kalimantan. The top contributors to the list are associated with local public higher education institutions, such as Universitas Mulawarman. The contributions of overseas researchers, such as Sheil D. from the Centre for International Forestry Research in Wageningen, Netherlands, strengthen the East Kalimantan context for economic and business development through the lens of innovative human resource mapping. Those researchers work in forestry management, conservation, and nature development. In terms of article production based on the Scopus database, top-list authors are also supported by their capability in scientific processes and standards, as evidenced by their relatively higher citation counts, Scopus h-index, and Google Scholar h-index, which

represent the author metric performance. Except for Sheil, D., an influential author based at a foreign institution, cooperation with a national institution reinforces the local networking of East Kalimantan scientists. As stated by [Rana & Sachdeva \(2025\)](#), the university has facilitated pivotal roles for innovative human resources in economic and business development, thereby fostering impactful networking among East Kalimantan societies, which has led to increased collaboration and knowledge sharing that benefits local communities and enhances regional development.

Table 2. The Most Productive Authors in East Kalimantan for Economic and Business Development Search String

No	Author Names	Articles Related to Keywords	Total Scopus Publication	Citation	Scopus h Index	Google Scholar h-Index	Institutions
1	Karyati	11	33	161	7	14	Universitas Mulawarman
2	Ruslim, Y.	11	41	287	10	14	Universitas Mulawarman
3	Kristiningrum, R.	9	23	138	7	9	Universitas Mulawarman
4	Rujehan	9	15	119	4	6	Universitas Mulawarman
5	Karmini	8	22	116	7	7	Universitas Mulawarman
6	Sheil, D.	8	231	20724	69	98	Center for International Forestry Research

Source: Scopus database, 2026

Despite a lower international rank, the local university of Universitas Mulawarman contributed the highest number of documents in the Scopus database for economic and business development in the context of East Kalimantan. Universitas Mulawarman contributes 137 total articles indexed in the Scopus database. The university is regarded as a prominent public university owned by the government. As illustrated by previous data (Figures 1 to 5), the majority of articles being produced are categorised into natural science, environmental science, petroleum, engineering, and energy. The other universities being exposed to forestry, agriculture and natural resources sciences, like IPB University, Badan Riset and Inovasi Nasional, the Centre for International Forestry Research, and Universitas Gadjah Mada, produce the second to fourth top list institutions, ranging from 25 to 50 articles in the Scopus database for the economic and business development of East Kalimantan. Developing the capabilities of human resources can be facilitated through the quality higher education being accessible for communities that the government of East Kalimantan strives for the broader impacts ([East Kalimantan Provincial Statistics Agency, 2025](#)). As detailed in Tables 1 and 2, the Universitas Mulawarman has strengthened the development of economic and business keywords in East Kalimantan. The functional role of higher education in the knowledge centre and ecosystem was explained by [Rana and Sachdeva \(2025\)](#), upholding the effect of organisational, regional and economic development.

Table 3. Most Productive Institutions for Producing Article-Indexed Database in Economic and Business Development of East Kalimantan

No	Author Affiliation Based on Scopus Database	Total Articles	World SDGs Impact Ranking	Status	Location
1	Universitas Mulawarman	137	Not Available	Public University	East Kalimantan
2	IPB University	50	101-200	Public University	West Java
3	Badan Riset dan Inovasi Nasional	48	Not Available	Government Institution	Jakarta
4	Centre for International Forestry Research, West Java	31	Not Available	Government Institution	West Java
5	Universitas Gadjah Mada	25	82	Public University	Jogjakarta
6	Institut Teknologi Kalimantan	19	Not Available	Public University	East Kalimantan
7	Universitas Diponegoro	17	301-400	Public University	Central Java
8	Universitas Indonesia	16	30	Public University	West Java
9	Institut Teknologi Bandung	16	201-300	Public University	West Java
10	Lembaga Ilmu Pengetahuan Indonesia	16	Not Available	Government Institution	Jakarta

No	Author Affiliation Based on Scopus Database	Total Articles	World SDGs Impact Ranking	Status	Location
11	Brawijaya University	15	401-600	Public University	East Java
12	Nature Conservancy	13	Not Available	International NGO	Global
13	Hasanuddin University	13	401-600	Public University	South Sulawesi
14	TotalEnergies SE	12	Not Available	International Company	Global
15	Politeknik Negeri Samarinda	12	Not Available	Public University	East Kalimantan
16	Universiteit van Amsterdam	11	Not Available	International University	Netherland
17	The Australian National University	10	Not Available	International University	Australia
18	Kyoto University	9	Not Available	International University	Japan
19	Universitas Padjadjaran	9	201-300	Public University	West Java
20	Institut Teknologi Sepuluh Nopember	9	201-300	Public University	East Java

Source: Scopus Database, 2026

The data from the Scopus database show that researchers in East Kalimantan, in the context of economic and business development, are publishing in natural sciences, engineering, and mining subjects that benefit the region. Those research contributions by East Kalimantan researchers, developed as a reference for regional development, are widely published by international publishers and national universities. The accessibility of such a database remains widely open and downloadable through online applications. The IOP Conference Series: Earth and Environmental Science, which disseminated 87 articles, became the top proceedings featuring researchers from East Kalimantan. Meanwhile, Biodiversitas, a reputable national journal based at Universitas Sebelas Maret, has served as the publication venue of the study. The strategic publication through online databases was effectively reiterated by [van Beurden et al. \(2024\)](#), who pointed out that universities played a crucial role in enabling digital accessibility for innovative human resources in research dissemination. In addition, [Guil Gorostidi and Rubio-Arostegui \(2026\)](#) explained that the embedded function of higher education, as suggested by the accreditation and ranking agenda, elevates the strategic human resources capabilities. Table 3 lists the top journals and conference proceedings for researchers in East Kalimantan to publish economic and business development research. Consistent with previous data, the source of the Scopus-indexed journal is more nuanced, with natural science, engineering, forestry, and conservation.

Table 4. Top Journals and Conference Proceedings Publishing Economic and Business Research in East Kalimantan

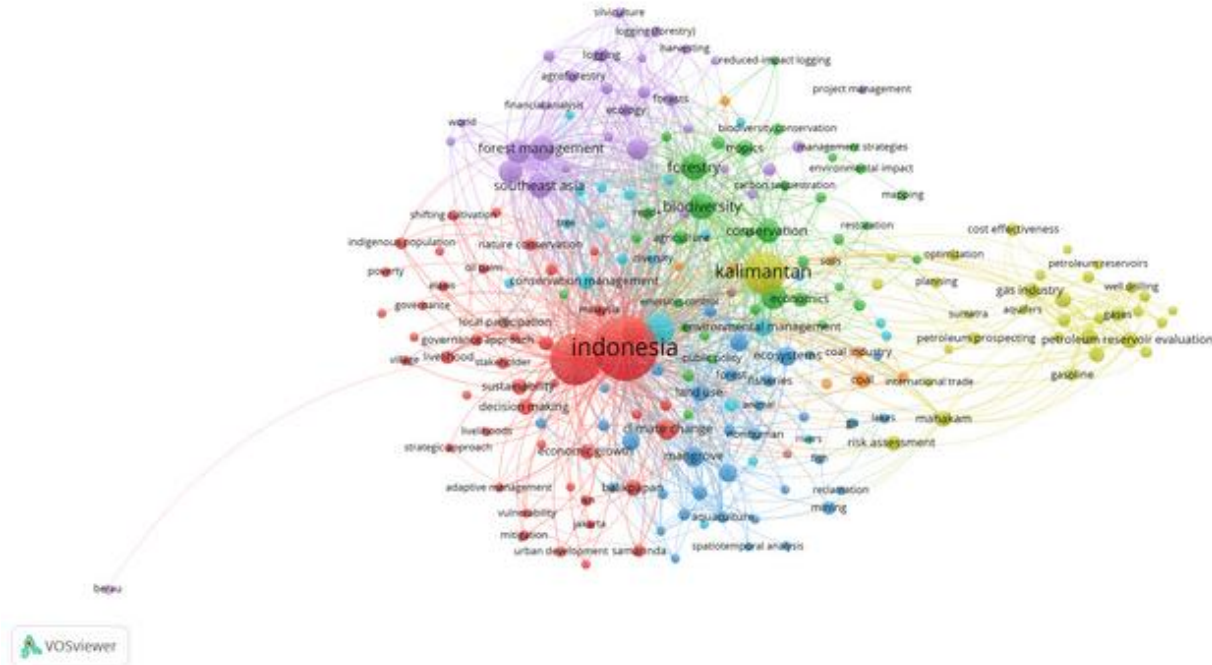
No	Source of Scopus Index-Publications	The Number of Articles	Scopus Coverage	Cite Score 2024	SJR Score 2024	SNIP Score 2024	Publisher
1	IOP Conference Series Earth and Environmental Science	87	2010 to 2026	1.3	0.214	0.335	Institute of Physics Publishing
2	Biodiversitas	31	2014 to 2026	3.1	0.366	0.757	Biology Department, Sebelas Maret University Surakarta
3	AIP Conference Proceedings	19	2003 to 2026	0.5	0.153	0.204	American Institute of Physics
4	Forest Ecology and Management	16	1982 to 2026	8.1	1.319	1.349	Elsevier
5	E3s Web of Conferences	9	2013 to 2026	1.1	0.205	0.363	EDP Sciences

Source: Scopus database, 2026

Thematic Clusters Characterise the Scientific Literature on Economic and Business Development in East Kalimantan

The bibliometric analysis using VOS viewer identified nine thematic clusters of economic and business development keywords in East Kalimantan, reflecting innovative human resources. To determine the clustered thematic finding, the study selects a minimum of 5 occurrences as a recommendation, which means the keyword in the Scopus database for the relevant article appears at least 5 times consecutively. However, the most significant cluster and density, based on Vos Viewer recommendations, suggest five thematic clusters that demonstrate the most significant characteristics of economic and business development in East Kalimantan, highlighting innovative human resources. The map is depicted in Figure 6 below. First, the highest concentrated keywords are situated in the red-coloured map. These themes emerge from the words, such as 'Indonesia' (222 times), 'East Kalimantan' (144), 'deforestation' (32), 'climate change' (23), and 'sustainability' (16). Those

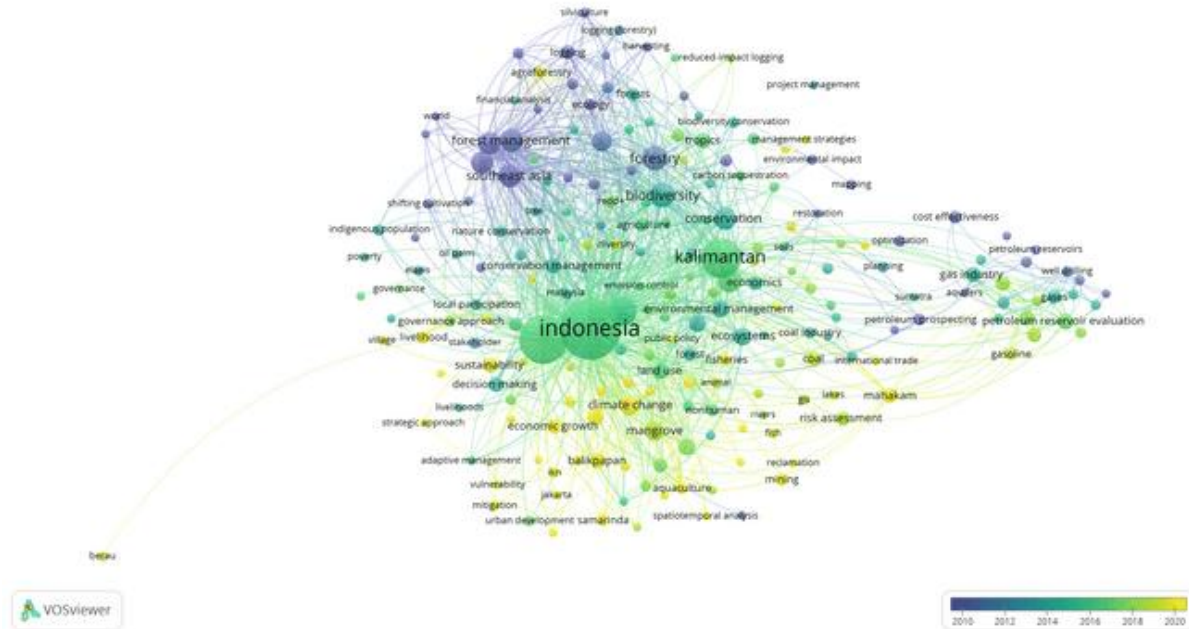
stated keywords, along with others, refer to environmental issues in East Kalimantan linked to deforestation and climate change in Indonesia. The first cluster shows that the most critical keywords lead to subsequent clusters that discuss environmental problems in Indonesia and East Kalimantan. Those problems are addressed constructively through the following thematic clusters.



Source: Scopus database, 2026

Figure 1: Network Visualization of Economic and Business Keywords in East Kalimantan (Minimum of 5 Occurrences)

The second – sixth themes show the details of the initial thematic cluster. Second, the green-coloured groups of keywords explain the specific issues of forest conservation and biodiversity in the context of economic and business development in East Kalimantan, highlighting the role of innovative human resources. The keywords such as 'biodiversity' (40 times), 'forestry' (40 times), 'conservation' (32 times), 'sustainable development' (37 times), 'agriculture' (12 times) and 'biomass' (11 times) connect the sustainable approaches for conservative effort on forest management through biodiversity improvement on biomass and agricultural strategy. Third, the light blue consists of significant keywords like 'mangrove' (23 times), 'ecosystem' (20 times), 'environmental protection' (18 times), 'remote sensing' (19 times), and 'human' (18 times). Those keywords mean that environmental protection for economic and business development in East Kalimantan relies on innovative human resources, through the development of mangrove ecosystems and the use of technologies such as remote sensing, while upholding human initiatives. Fourth, the light-yellow group on the right side of the VOS viewer map consists of the words 'Kalimantan' (98 times), 'petroleum reservoir evaluation' (17 times), 'risk assessment' (14 times), 'offshore well production' (16 times), 'infill drilling' (15 times), and 'cost effectiveness' (16 times). Such keywords represent the innovative human resource development of economics and business in East Kalimantan for the oil and gas industry. The issues mentioned are more pronounced in industry operations across Kalimantan Island, given the cost-effectiveness. The fifth group is coloured light purple as the last and most dominant thematic cluster. These themes include keywords such as 'forest management' (35 times), 'Asia' (33 times), 'Eurasia' (32 times), 'Southeast Asia' (35 times), 'tropical forest' (26 times), and 'logging' (12 times). Such keywords are focused on forest management, and their productive supply line connects to the innovative regional development of economics and business from East Kalimantan to other regional economies. The remaining thematic clusters are considered similar to the five dominant groups mentioned earlier, and they can be systematically discussed within the thematic group of this bibliometric analysis.



Source: Scopus database, 2026

Figure 2: Overlay Visualisation of Economic and Business Keywords in East Kalimantan (Minimum of 5 Occurrences)

The bibliometric software analytical tool, VOS viewer, suggests further development of co-occurrence into timely clusters, using overlay visualisation to depict the inclination shown in Figure 6 above. The thematic cluster, based on the researcher's interest in innovative human resources for economic and business development in East Kalimantan, evolved dynamically over the years, from the very beginning to 2026. The indication in Figure 7 shifts from dark green to light yellow to show the latest developments of economic and business keywords. Innovative human resources in economic and business development evolve from the most widely dense thematic natural resources—forest management and conservation—to the innovation of oil mining, petroleum, and sustainable business adaptation. The new trend of such keywords, anchored in Indonesia, Kalimantan, and East Java, focuses on environmental balance and economic development grounded in East Kalimantan's potential and advantages in the global economy.

The Theme Development of Innovative Human Resources and Knowledge-Based Regional Development

Using systematic review as content analysis, as recommended [Marzi et al. \(2025\)](#), [Page et al. \(2021\)](#), and [Passas \(2024\)](#) for understanding the selected issues on economic and business development in East Kalimantan, the study classified the retrieved publications into thematic groups based on similarities in research topics. Table 5 summarises the thematic clusters of Scopus-indexed publications on economics and business development in East Kalimantan. The thematic classification was conducted through an iterative coding process involving systematic reading of article titles, abstracts, author keywords, and indexed keywords. First, the 681 documents were reviewed and grouped according to their dominant research focus. Second, articles with similar topics were aggregated into broader thematic categories. Third, the resulting categories were refined and synthesised into ten thematic clusters representing the major research streams in East Kalimantan. The classification process was supported by keyword co-occurrence analysis generated through VOSviewer and complemented by manual content review to ensure conceptual consistency among articles assigned to each cluster. Of the 681 documents, the largest proportion of articles was classified under urban/regional growth, business performance, and IKN transition (25.4%), followed by forest governance, tropical biodiversity, and biomass/carbon systems (15.3%). The details are presented in Table 5. In terms of emerging research directions, themes such as urban/regional growth and climate, policy, health, education,

and social resilience have recently attracted increasing attention from researchers. Meanwhile, forest governance, tropical biodiversity, and biomass/carbon systems remain the most influential thematic cluster based on citation performance.

In a detailed summary, the ten thematic clusters explain the dynamic analytical context of economic and business development in East Kalimantan, capturing innovative human resources. Those ten clusters are synthesised in their similarities into five themes as following connections. First, climate change and deforestation affect the geographical landscape of East Kalimantan and the well-being of the community living inside the province (Wollenberg et al., 2000; Masuda et al., 2019; Butarbutar et al., 2019). This includes the relocation of national capital issues to environmental problems that need to be solved immediately through political will and intervention (Anderson et al., 2016). Second, East Kalimantan, as the central location of coal mining and natural gas exploration, experienced the tremendous risk of ecological damages, water sewerage and air pollution that required the innovation of technology such as remote sensing for ecological vulnerability (Gastaldo, 2010; Lestari & Trihadiningrum, 2019; Kurniawan et al., 2022). The issues should be revisited for the catastrophic impacts on society. Third, as the province with mining locations, the technological conservation software can support integrated natural resource management, marine spatial planning, and reclamation strategies (Watts et al., 2009). Fourth, the mangrove ecosystem might contribute to carbon storage and accumulation, protecting and restoring a significant role for blue carbon sinks (Kusumaningtyas et al., 2019). Fifth, the new innovation in oil rigs for petroleum and gas exploration could help to create a reduction in decommissioning costs and generate environmental benefits, fisheries productivity, and economic opportunities for coastal communities (Nugraha et al., 2019).

Table 5: Summary of the Most-Cited Articles on Economic and Business Development in East Kalimantan (Scopus Database)

No	Thematic Clusters of Scopus-Indexed Publications	Document Counts	Share of Documents Percentage	Average Years	Average Citation
1	Urban/regional growth, business performance, and IKN transitions	173	25.4%	2020.5	4.1
2	Water resources, hydrology, and aquatic pollution	30	4.4%	2019.2	4.0
3	Climate, policy, health, education, and social resilience	71	10.4%	2019.8	6.8
4	Energy planning, power systems, and emissions transition	35	5.1%	2020.9	3.4
5	Oil and gas drilling, reservoirs, and production optimisation	53	7.8%	2012.4	2.1
6	Coal mining impacts, reclamation, and post-mining environments	52	7.6%	2019.6	5.8
7	Conservation, ecotourism, protected areas, and marine planning	40	5.9%	2017.3	25.7
8	Mangroves, deltas, aquaculture, and coastal carbon	33	4.8%	2019.2	22.3
9	Forest governance, tropical biodiversity, and biomass/carbon systems	104	15.3%	2012.6	29.8
10	Plantations, land-use change, fisheries, and rural livelihoods	90	13.2%	2014.6	15.0
		681	100.0%		

Source: Scopus database, 2026

Conclusion

The publication of innovative human resources in the economic and business development of East Kalimantan has indicated the increasing fluctuating trend since the launch of the Scopus database. The bibliometric analysis mentions the trending keywords of Indonesia, Kalimantan and East Kalimantan as the central gravity of research action, highlighting the sustainable development on forestry, biodiversity, and conservation, responding to the issues of climate change and deforestation. Most studies in the database focus on environmental sciences, agricultural and biological sciences, earth and planetary sciences, energy, social sciences, and engineering. Those highlighted keywords have been the epicentre of East Kalimantan's potential. The production of Scopus documents is mostly dominated by conference proceedings and journal articles, which involve authorship collaboration across countries and institutions. Based on the retrieved Scopus database, the economic and business development of innovative human resources in East Kalimantan is led by the leading scholar and local institute of higher education of Universitas Mulawarman. The collaborative networks show the interconnections among authors, placing local authors as the highest contributors in the East Kalimantan context.

The thematic cluster, based on VOS viewer output, depicts the dynamic, evolving transformation of study topics in economic and business development, reflecting innovative human resources. The potential of

mining and oil exploration, which has resulted in deforestation and climate change, is gradually being addressed through solutions from scholars in East Kalimantan. The changing gradation of scholarly topics in East Kalimantan for economic and business development has evolved into new, demanding issues, as depicted in previous data analyses (Figures 6 and 7 and Tables 5 and 6). Technology, cost-effectiveness, and communal action are the trending topics capturing the attention of society in East Kalimantan for economic and business development. Of 681 articles collected, the bibliometric analysis yields 10 thematic clusters that represent the situation of economic and business development in East Kalimantan. Those summaries emerge from innovative human resources, leading to the most prioritised and cited highlights, consisting of climate change, deforestation, ecological damage, and pollution that the affiliated researchers attempted to solve with technology, nature conservation efforts, and active participation from society. The study then suggests that policymakers in East Kalimantan refer to the innovative human resource map, which is to be adjusted to the sustainable development agenda. The thematic recommendation might strengthen policy action by East Kalimantan's local government by engaging the interconnected networks of local and global scholars.

Based on the ten thematic clusters identified in this study, several policy implications can be proposed. First, regional authorities should strengthen forest governance, biodiversity conservation, and carbon-management initiatives to address deforestation and climate-related risks. Second, the mining, coal, oil, and gas sectors should be encouraged to adopt sustainable production practices and allocate greater investment toward post-mining reclamation and environmental restoration. Third, policymakers should expand support for mangrove rehabilitation, coastal carbon management, and marine spatial planning as part of climate adaptation strategies. Fourth, the transition associated with the Nusantara Capital City (IKN) requires stronger collaboration among universities, industries, and government institutions to develop skilled human resources and innovation capacity. Finally, provincial research funding should prioritise interdisciplinary studies related to sustainability, resource management, and regional economic transformation, which emerged as the dominant themes in the bibliometric analysis.

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Appendices

Table 6: Thematic Classification and List of the Most-Cited Articles in Economic and Business Development Based on the Scopus Database

No	Thematic Classification	Titles	Authors	Citation
1	Urban/regional growth, business performance, and IKN transitions	How are healthy, working populations affected by increasing temperatures in the tropics? Implications for climate change adaptation policies	Masuda Y.J.; Castro B.; Aggraeni I.; Wolff N.H.; Ebi K.; Garg T.; Game E.T.; Krenz J.; Spector J.	62
2	Coal mining impacts, reclamation, and post-mining environments	Eco-environment vulnerability assessment using remote sensing approach in East Kalimantan, Indonesia	Kurniawan R.; Saputra A.M.W.; Wijayanto A.W.; Caesarendra W.	25
3	Conservation, ecotourism, protected areas, and marine planning	Marxan with Zones: Software for optimal conservation-based land- and sea-use zoning	Watts M.E.; Ball I.R.; Stewart R.S.; Klein C.J.; Wilson K.; Steinback C.; Lourival R.; Kircher L.; Possingham H.P.	498
4	Energy planning, power systems, and emissions transition	Carbon recovery following selective logging in tropical rainforests in Kalimantan, Indonesia	Butarbutar T.; Soedirman S.; Neupane P.R.; Köhl M.	19
5	Forest governance, tropical biodiversity, and biomass/carbon systems	Using scenarios to make decisions about the future: Anticipatory learning for the adaptive co-management of community forests	Wollenberg E.; Edmunds D.; Buck L.	220
6	Mangroves, deltas, aquaculture, and coastal carbon	Variability in the organic carbon stocks, sources, and accumulation rates of Indonesian mangrove ecosystems	Kusumaningtyas M.A.; Hutahaean A.A.; Fischer H.W.; Pérez-Mayo M.; Ransby D.; Jennerjahn T.C.	168
7	Oil and gas drilling, reservoirs, and production optimization	Rigs-To-Reef (R2R): A new initiative on re-utilization of abandoned offshore oil and gas platforms in Indonesia for marine and fisheries sectors	Nugraha R.B.A.; Basuki R.; Oh J.S.; Cho I.H.; Naibaho N.; Secasari Y.; Mbay L.O.N.	8
8	Plantations, land-use change, fisheries, and rural livelihoods	The impact of improper solid waste management to plastic pollution in Indonesian coast and marine environment	Lestari P.; Trihadiningrum Y.	182
9	Urban/regional growth, business performance, and IKN transitions	Green growth rhetoric versus reality: Insights from Indonesia	Anderson Z.R.; Kusters K.; McCarthy J.; Obidzinski K.	77
10	Water resources, hydrology, and aquatic pollution	Peat or no peat: Why do the Rajang and Mahakam Deltas differ?	Gastaldo R.A.	40

Source: Scopus database, 2026