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The intellectual structure and thematic evolution of middle-income trap research: A bibliometric analysis (2009–2025)

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Abstract

Despite the rapid growth of scholarly and policy interest in the middle-income trap (MIT) since its formal introduction in 2007, the literature remains fragmented, with limited efforts to systematically map its intellectual structure or thematic evolution. This study presents the first comprehensive bibliometric analysis of MIT research, covering 385 publications indexed in the Web of Science (2009–2025). Using a triangulated methodology that integrates Bibexcel for performance metrics, VOSviewer for co-authorship and keyword network mapping, and SciMAT for longitudinal thematic evolution, the study identifies the core trajectories, knowledge clusters, and strategic shifts that have shaped the field over time. Results reveal a dynamic research domain increasingly grounded in themes such as structural transformation, innovation capacity, institutional reform, and human capital development, with strong regional concentration in Asia and Latin America. Thematic evolution analysis demonstrates both conceptual maturation and persistent fragmentation, as the core notion of the MIT remains under-theorized and variably defined. By exposing the field's structural dynamics, dominant actors, and conceptual gaps, this study offers a critical roadmap for scholars, while providing policymakers with a consolidated view of the research frontiers most relevant to long-run growth and developmental upgrading.

Keywords: middle income trap, economic development, structural transformation, bibliometric analysis
Jel Codes: F63, O10

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1. Introduction

Since the mid-20th century, many developing economies have transitioned into middle-income status by leveraging low-cost labor and export-oriented growth strategies. Yet only a small subset have successfully advanced to high-income levels. Most remain trapped in what economists term the middle-income trap (MIT)—a prolonged period of economic stagnation in which rising wages erode cost competitiveness, while institutional and technological deficiencies hinder further progress (Agénor, 2017).

The term "middle-income trap" was first coined by Gill and Kharas (2007) to describe countries caught between low-income economies that retain cost advantages in labor-intensive production and high-income economies that thrive on innovation and advanced technology. Economies in this trap often lose their edge in low-wage manufacturing but fail to make the leap toward knowledge-intensive industries due to insufficient human capital, weak innovation systems, and underdeveloped institutions (Gill & Kharas, 2015). As a result, they struggle to maintain productivity growth and face mounting development challenges.

Despite the increasing relevance of the MIT in policy and academic debates, the literature remains conceptually fragmented and methodologically dispersed. While numerous empirical studies and case-specific analyses have emerged—particularly focused on Asia and Latin America—there has been no comprehensive effort to systematically map the intellectual structure, thematic evolution, or research dynamics of the field. This lack of synthesis makes it difficult to assess how the discourse has matured, where scholarly attention is concentrated, and which conceptual or regional blind spots persist.

This study is motivated by the need to address that gap. It presents the first bibliometric analysis of the middle-income trap literature, providing a panoramic view of the field's development from 2009 to 2025. Using a corpus of 385 publications indexed in the Web of Science, we deploy a triangulated methodological framework: Bibexcel is used for performance indicators, VOSviewer for co-authorship and keyword network mapping, and SciMAT for longitudinal thematic tracking. This integrated approach not only uncovers the most influential authors, institutions, and publications, but also reveals the evolution of key research themes such as structural transformation, innovation, productivity, governance, and regional trajectories.

In doing so, this paper makes three key contributions. First, it fills a major empirical and methodological void by synthesizing a dispersed body of literature through advanced bibliometric tools. Second, it provides a structured lens for understanding how the MIT debate has evolved across time, geography, and disciplines. Third, it offers scholars and policymakers a roadmap for identifying conceptual blind spots and setting future research agendas.

The paper is structured as follows. Section 2 outlines the methodological design. Section 3 presents the descriptive results. Section 4 analyzes the intellectual and collaborative networks. Section 5 explores the thematic dynamics across three periods. Section 6 concludes by highlighting key findings, unresolved debates, and policy implications.

2. Methodology

2.1. Data

This study draws upon the Web of Science (WoS) database to conduct a comprehensive literature review on the middle-income trap. WoS was selected for its robust coverage of high-quality academic publications, standardized citation indexing, and compatibility with bibliometric tools such as Bibexcel, VOSviewer, and SciMAT (Kong et al., 2022; Mongeon & Paul-Hus, 2016; Qiu et al., 2023). The search strategy began with a review of foundational studies in the field to identify relevant keywords. Based on this review, the query term TI = "middle income trap" was adopted as the core search phrase.

The search was executed on April 4, 2025, using a two-stage filtering process. Initially, the term was applied across "All Fields", yielding 544 documents. However, this broad scope returned a substantial number of irrelevant results. To improve precision, the search field was subsequently narrowed to "Topic", which restricts the query to the title, abstract, and author keywords. This refinement reduced the dataset to 461 documents. To further ensure relevance and analytical coherence, the dataset was

limited to peer-reviewed journal articles, books, and book chapters, resulting in a final sample of 385 records used for bibliometric analysis.

2.2. Methods Used in Bibliometric Analysis

Conducting a comprehensive review and classification of literature within a research domain is often a meticulous and time-intensive endeavor. Bibliometric analysis offers a systematic and replicable method to streamline this process by quantitatively evaluating scholarly output and visualizing structural patterns within the literature. This dual capacity not only enhances efficiency but also facilitates deeper insights into the intellectual architecture of a research field.

Bibliometric analysis encompasses two core dimensions: performance analysis and science mapping (Cobo et al., 2015). Performance analysis focuses on quantitative indicators such as the number of publications per year, citation counts, and h-index values, providing a snapshot of academic productivity and influence. Science mapping, in contrast, examines the relational structure of the field—offering network visualizations of co-authorship, institutional collaboration, geographic distribution, and keyword co-occurrence patterns. The integration of these methods enables the construction of a nuanced and multidimensional understanding of the scholarly landscape (Small,1999).

In this study, three complementary software tools were employed to operationalize the bibliometric framework: Bibexcel for performance metrics, VOSviewer for network mapping, and SciMAT for thematic evolution analysis. This triadic approach provides both breadth and depth, allowing for a robust exploration of the development and diversification of middle-income trap research over time.

2.2.1. Analytical Framework and Methodological Tools

To systematically examine the evolution and intellectual structure of the middle-income trap (MIT) literature, this study adopts an integrated bibliometric methodology that combines performance analysis and science mapping. Three specialized software tools—Bibexcel, VOSviewer, and SciMAT—are employed to operationalize this framework. Each tool contributes distinct analytical strengths, enabling a triangulated approach to capture both quantitative trends and relational patterns within the literature.

2.2.1.1. Bibexcel: Quantitative Performance Analysis

Bibexcel is a widely used tool for processing bibliographic data and extracting performance indicators from databases such as Web of Science. It facilitates the generation of descriptive statistics, including publication frequencies, citation distributions, and journal productivity metrics (Persson & Schneider, 2009; Jemghili, Taleb & Khalifa, 2021). In this study, Bibexcel is utilized to:

i. Identify the annual publication output of MIT-related research

ii. Visualize the distribution of publications across scholarly journals

iii. These metrics provide a foundational overview of the field's expansion and dissemination across outlets.

2.2.1.2. VOSviewer: Network Mapping and Relational Structures

VOSviewer is a dedicated bibliometric mapping tool that enables the visualization of co-occurrence and co-authorship networks based on bibliographic coupling, citation, and keyword data. Through the use of proximity-based clustering and node sizing algorithms, it reveals both the intensity and structure of scholarly collaboration and conceptual coalescence (Pauna et al. 2019; Jemghili, Taleb & Khalifa, 2021). In this study, VOSviewer is employed to examine:

i. The most frequently cited publications

ii. International co-authorship and country-level collaboration patterns

iii. Author-supplied keyword networks and thematic clusters

These analyses reveal the underlying social and intellectual configurations shaping MIT research.

2.2.1.3. SciMAT: Thematic Evolution and Strategic Mapping

SciMAT offers advanced capabilities for diachronic analysis, allowing researchers to explore how thematic emphases evolve over time. It generates strategic diagrams using the concepts of centrality and density—where centrality measures the external connectivity of a theme (its importance to the broader field), and density reflects the internal coherence of the thematic cluster (Callon et al., 1991; Cobo et al., 2015; Qiu et al., 2023). Based on these dimensions, themes are categorized as:

i. Motor themes (high centrality, high density)

ii. Basic and transversal themes (high centrality, low density)

iii. Developed but isolated themes (low centrality, high density)

iv. Emerging or declining themes (low centrality, low density)

SciMAT is applied in this study to trace the thematic evolution of MIT literature across three distinct periods: 2009–2013, 2014–2017, and 2018–2025. This approach enables the identification of both persistent and transitional research agendas.

2.2.1.4. Preprocessing and Keyword Harmonization

Prior to analysis, a thorough preprocessing of the bibliographic data was conducted. All author-defined keywords across the 385 selected documents were reviewed and harmonized by merging synonymous or closely related terms under standardized labels. This was essential to ensure semantic consistency in co-occurrence analysis and to prevent fragmentation of conceptually similar terms during clustering.

2.2.1.5. Analytical Workflow

The integrated bibliometric procedure followed four sequential stages:

i. Descriptive trend analysis of publication volume and journal distribution using Bibexcel

ii. Mapping of citation networks, co-authorship patterns, and keyword co-occurrence using VOSviewer

iii. Thematic clustering and diachronic mapping of concept evolution using SciMAT

iv. Synthesis of results into a strategic overview of the field's development trajectory

This multi-method design provides both a macroscopic and longitudinal understanding of the MIT research domain. The overall methodological sequence is depicted in Figure 1.

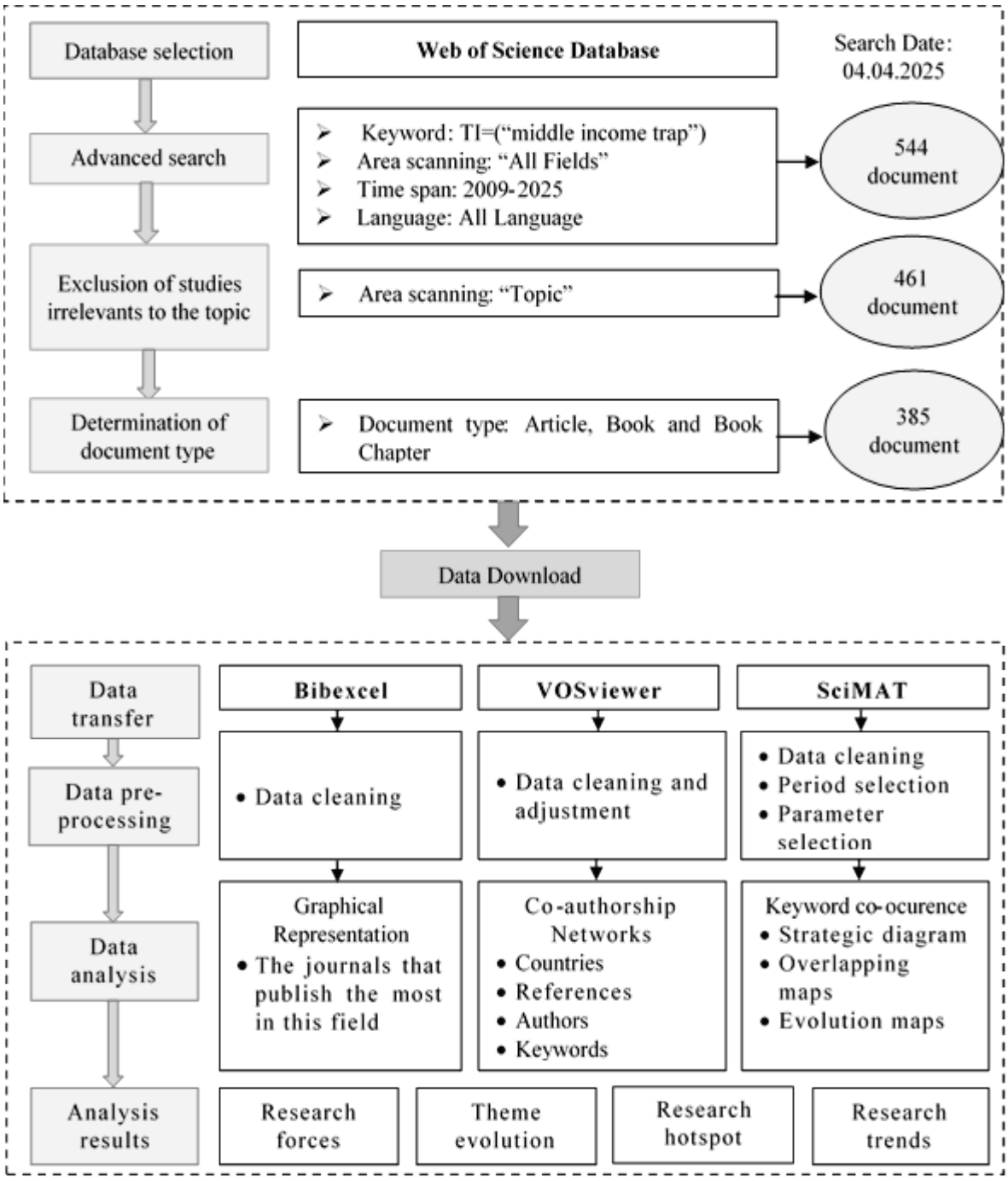

Figure 1. Outline of the Research Design

Source: Adapted by us from Qiu et al. (2023).

3. Descriptive Analysis

Prior to conducting the bibliometric analyses, a rigorous keyword harmonization process was undertaken to enhance the reliability and interpretability of the results. Given the variability in how authors label similar concepts, synonymous and semantically related keywords were standardized based on the most widely accepted terminology in the existing literature. This step was essential to avoid analytical distortions such as duplicate entries, fragmented clusters, or misrepresented thematic connections.

The harmonization was applied across all author-defined keywords extracted from the selected 385 publications. By consolidating variants under unified terms, the study ensured greater consistency in

both network visualizations and thematic evolution analyses. The full list of matched keywords is presented in Table 1.

Table 1. Synonymous Keywords

Matching Table for Keywords Determined by Authors	
middle-income trap	middle income trap; Middle Income Trap; middle‐ income; Income traps; middle income trap (MIT); middle-income traps; middle-income; Middle-income economy
economic growth	Economic growth; Growth; Economic growth type; economic growth theories
innovation	Innovativeness, innovation policy
growth slowdown	growth slow-down; Slowdown; Economic slowdown
convergence	Convergence Hypothesis; Economic convergence; real convergence
technological capability	Technological capabilities
technological catch- up	technological catching-up; technological progress; Technology upgrading; technological change; Technological development
structural transformation	Structural transformation; structural transformation of economy; structural change; structural break; structural reform; Structural change process
productivity	factor productivity; productivity growth; aggregate productivity
industrialization	Industrial development; industrial upgrading; new industrial revolution; industrial revolution
total factor productivity	factor productivity

3.1. Publication and Citation Trends

The temporal distribution of scholarly output and its corresponding citation intensity serves as a critical indicator of academic interest and the evolving significance of a research field. Figure 2 presents a dual-axis visualization of the annual number of publications (bar graph) and their citation frequencies (line graph) within the Web of Science (WoS) database. The earliest WoS-indexed publications on the middle-income trap (MIT) date back to 2009, just two years after the concept was formally introduced by Gill and Kharas (2007).

The development of the MIT literature can be broadly divided into three distinct periods:

2009–2013 (Conceptual Emergence and Framing): This initial stage marks the formative years of the field, during which foundational studies established the conceptual contours of the trap and drew connections between middle-income stagnation, structural transformation, and institutional deficits.

2014–2017 (Search for Policy Solutions): This period is characterized by a notable shift toward applied research, beginning with the publication of Eichengreen et al.'s influential article, “Growth Slowdowns Redux” (2014). Studies from this phase increasingly focus on identifying the conditions under which countries can escape the trap.

2018–2025 (Empirical Expansion and Thematic Diversification): This most recent phase commences with Aiyar et al.’s (2018) study “Growth Slowdowns and the Middle-Income Trap?”, which examines the influence of demography, infrastructure, macroeconomic policy, and trade composition. The period between 2019 and 2023 saw a surge in research activity, while a relative decline in publication volume was observed in early 2024 and 2025. However, despite this deceleration, the literature has become increasingly empirical, multidimensional, and solution-oriented, reflecting a maturation of the field and its closer alignment with policy-relevant outcomes.

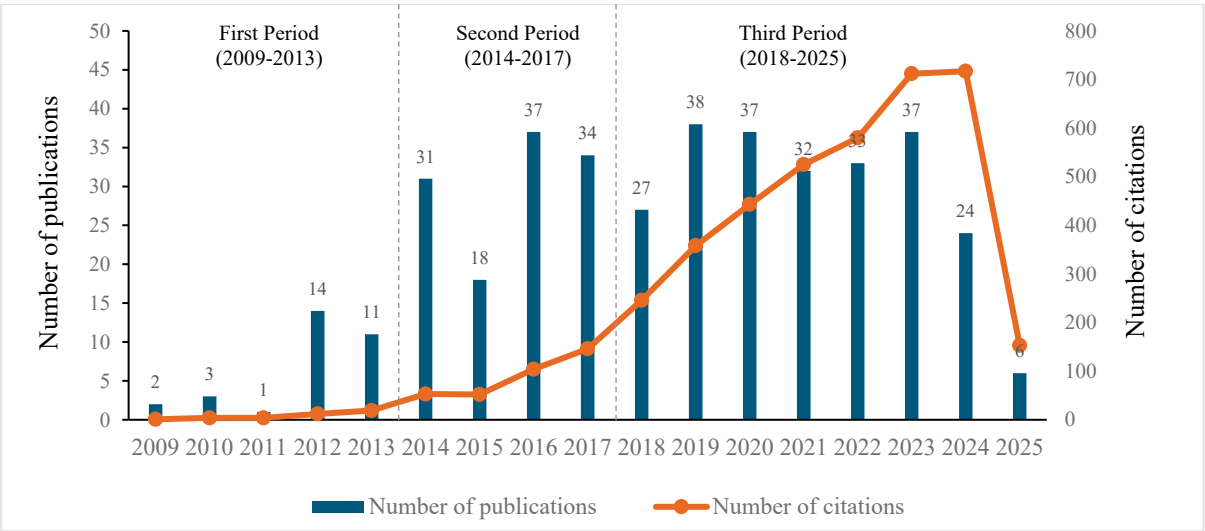

Figure 2. Distribution of Publications and Number of Citations by Year

3.2. Core Journals and Disciplinary Anchors

The distribution of publications across journals provides valuable insight into the disciplinary affiliations and thematic focus of a research field. Figure 3 presents the ten journals with the highest number of publications on the middle-income trap, offering a snapshot of the field's academic landscape.

Figure 3. The Most Widely Published Journals in this Field

The leading journal is Structural Change and Economic Dynamics, which aligns closely with the core concerns of the MIT literature—namely, productivity transitions, sectoral shifts, and long-run economic development. Notably, four of the top ten journals are based in Asia, reflecting the regional concentration of MIT studies, particularly in countries such as China, Malaysia, Thailand, and the Philippines.

Among the remaining journals, three are dedicated development journals, underscoring the intrinsic relationship between the middle-income trap and broader development processes. The concepts of development and the MIT are deeply intertwined, as the trap itself represents a developmental impasse in the trajectory toward sustained economic convergence.

Additionally, the journal Sustainability appears among the top publishers, highlighting the intersection between sustainable development and long-term structural challenges faced by middle-income countries. The inclusion of Maliye Dergisi, a journal published by the Ministry of Treasury and Finance

of the Republic of Türkiye, further underscores the relevance of the MIT in national development discourse—especially in countries actively grappling with the trap.

In sum, the common attributes of the most prominent journals in this field include:

i. A strong orientation toward economic development, structural transformation, or policy reform

ii. A regional or institutional proximity to countries affected by the middle-income trap

iii. An increasing focus on interdisciplinary approaches linking economics, public policy, and sustainability

4. Co-authorship Network Analysis

4.1. Country-Level Collaboration Patterns

Understanding the international collaboration landscape is critical for comprehending how countries engage with the middle-income trap (MIT) as both a shared developmental challenge and a subject of comparative inquiry. Given that countries experience the MIT through varying institutional, demographic, and structural contexts, cross-national scholarly collaboration offers the opportunity to compare trajectories, identify common determinants, and develop policy-relevant frameworks tailored to different regional realities.

Figure 4 presents the co-authorship network of countries contributing to MIT-related literature, where each node represents a country, the node size reflects its total publication output, and the thickness of the connecting lines (edges) indicates the strength of collaboration (Ding & Cronin, 2011). To ensure comprehensiveness while maintaining interpretability, the network includes all countries with at least one publication and one citation within the dataset.

The analysis identified six distinct country clusters, each color-coded in the visualization:

Yellow cluster: Led by China, this group includes Australia, Denmark, Belgium, and Colombia.

Purple cluster: Comprises the United States, Malaysia, and the Philippines (although the latter is not labeled, it is geographically adjacent to Malaysia).

Red cluster: Includes Turkey, Brazil, Germany, Portugal, Poland, Switzerland, and Norway, forming a diverse mix of European and emerging economies.

Green cluster: Consists of Japan, South Korea, Russia, Singapore, Thailand, Canada, and Taiwan (the latter is located near Japan but not labeled in the figure).

Blue cluster: Comprises the United Kingdom, Chile, Indonesia, Italy, and Vietnam.

Turquoise cluster: Contains only France and Spain, indicating strong bilateral collaboration between the two countries.

Among all contributors, China and the United States emerge as the most prolific, with 73 publications each. Notably, the strongest bilateral link in the co-authorship network is between these two countries—reflecting both the volume of collaborative research and the strategic importance of MIT-related issues in their respective policy agendas.

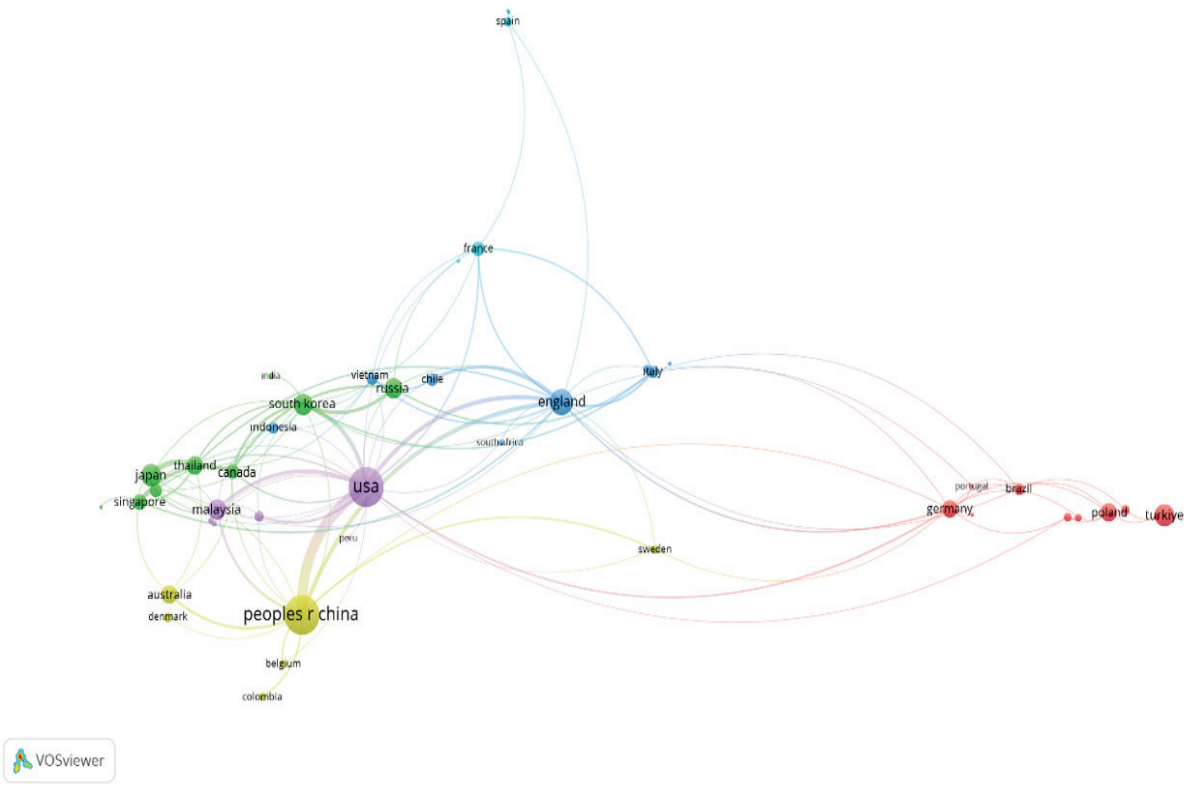

Figure 4. Co-authorship Networks among Countries

The map also highlights that research on the MIT is not confined solely to countries currently trapped at middle-income levels. Several high-income countries that have successfully avoided or escaped the trap—such as South Korea, the United States, the United Kingdom, and Japan—continue to play a central role in advancing research in the field. This suggests a broader academic interest in the institutional, structural, and macroeconomic dynamics that shape long-term development trajectories.

In particular, collaborations between countries that have escaped the trap and those still caught within it are of analytical and policy significance. The strong linkage between China and the United States exemplifies this pattern, providing a potential conduit for knowledge transfer, comparative policy learning, and joint theoretical refinement.

4.2. References

In bibliometric research, highly cited publications are generally regarded as having substantial academic influence and intellectual leadership within a given field (Small 1999). As visualized in Figure 5, the size of each node represents the citation volume, while the spatial proximity of nodes reflects thematic or citation-based connectivity. Larger and more centrally positioned nodes correspond to works that have exerted a foundational or path-defining influence on the development of middle-income trap (MIT) scholarship.

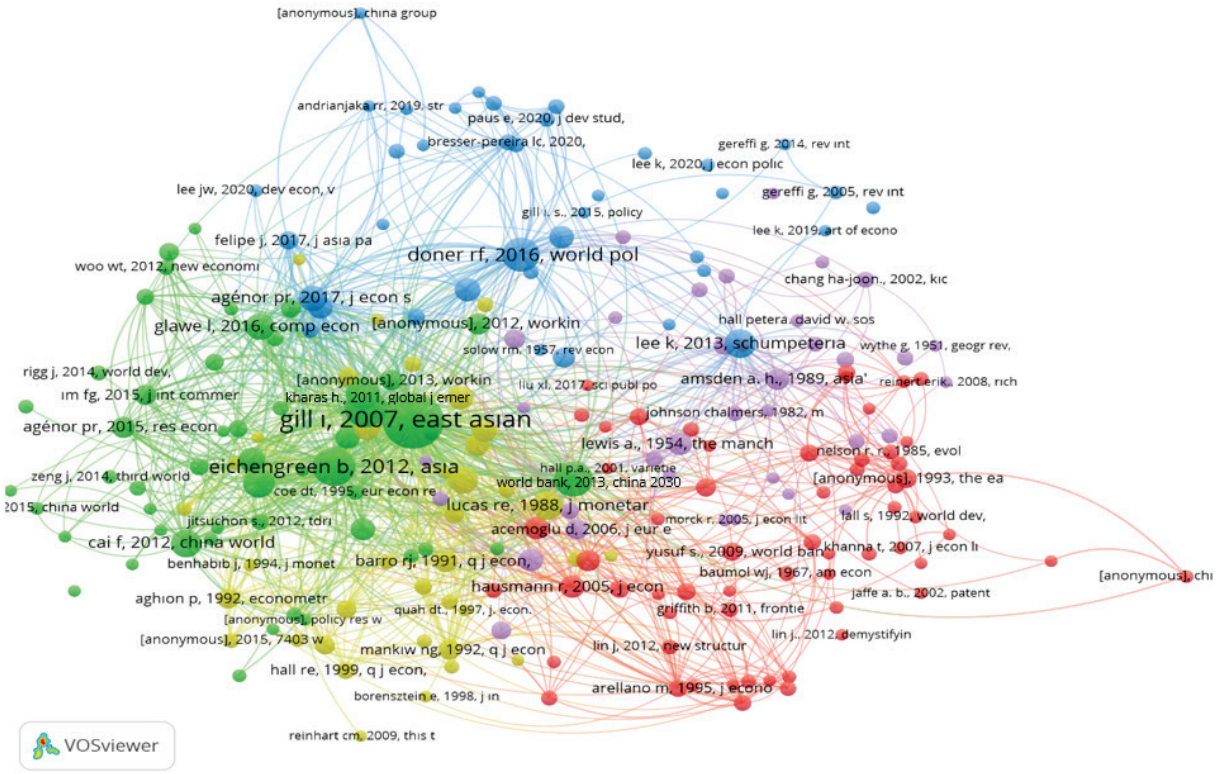

Figure 5. Co-citation Reference Network

At the center of the citation network lies the seminal work by Gill and Kharas (2007), An East Asian Renaissance: Ideas for Economic Growth. This book introduced the term "middle-income trap" into the development discourse and remains the intellectual anchor of the field. Its central placement and dominance in node size underscore its pioneering status and enduring relevance.

The second most influential node corresponds to the article by Eichengreen, Park, and Shin (2012) titled “When Fast-Growing Economies Slow Down: International Evidence and Implications for China.” This study investigates growth deceleration, a defining symptom of the MIT, and offers empirical evidence on the structural and macroeconomic drivers of slowdown episodes—particularly in middle-income economies.

The third major reference is the article by Kharas and Kohli (2011), “What Is the Middle Income Trap, Why Do Countries Fall into It, and How Can It Be Avoided?”. This paper provides conceptual clarity by defining the MIT in precise terms and examining the developmental dynamics that entrap countries in this income range. As a continuation of the ideas introduced in 2007, it further systematizes the discourse and proposes a framework for analysis and policy response.

Another critical node in the network is the World Bank’s 2013 report, China 2030: Building a Modern, Harmonious, and Creative Society. This comprehensive volume not only outlines strategic pathways for China’s economic transformation but also serves as a reference model for countries navigating similar structural challenges. It remains a cornerstone publication for MIT studies with a regional focus on East Asia.

The fifth major contribution is the article by Doner and Schneider (2016), “The Middle-Income Trap: More Politics Than Economics.” This work shifts the analytical lens by foregrounding the role of institutional and political barriers—arguing that failure to escape the MIT is often rooted less in economic mismanagement and more in governance weaknesses, policy incoherence, and elite capture. Its critical perspective has spurred a growing line of inquiry into the political economy of development stagnation.

Together, these highly cited works have shaped the conceptual foundations, empirical trajectories, and normative debates within MIT research. Their prominent positions in the citation network highlight both their individual influence and their cumulative role in defining the intellectual contours of the field.

4.3. Author Collaboration Networks

In bibliometric research, co-authorship network analysis provides valuable insights into the social structure of knowledge production, revealing the collaborative dynamics that shape the development of a research field. In the context of the middle-income trap (MIT), author-level collaboration patterns offer a window into the intellectual communities that have guided the field's theoretical, empirical, and policy evolution.

Figure 6 illustrates the co-authorship network of the most influential scholars working on MIT-related themes. The nodes represent individual authors, the size of each node indicates publication volume or influence, and the links between nodes denote the frequency and strength of co-authored work. Based on network clustering, the literature is structured into four distinct author clusters, each reflecting a different intellectual lineage or thematic orientation.

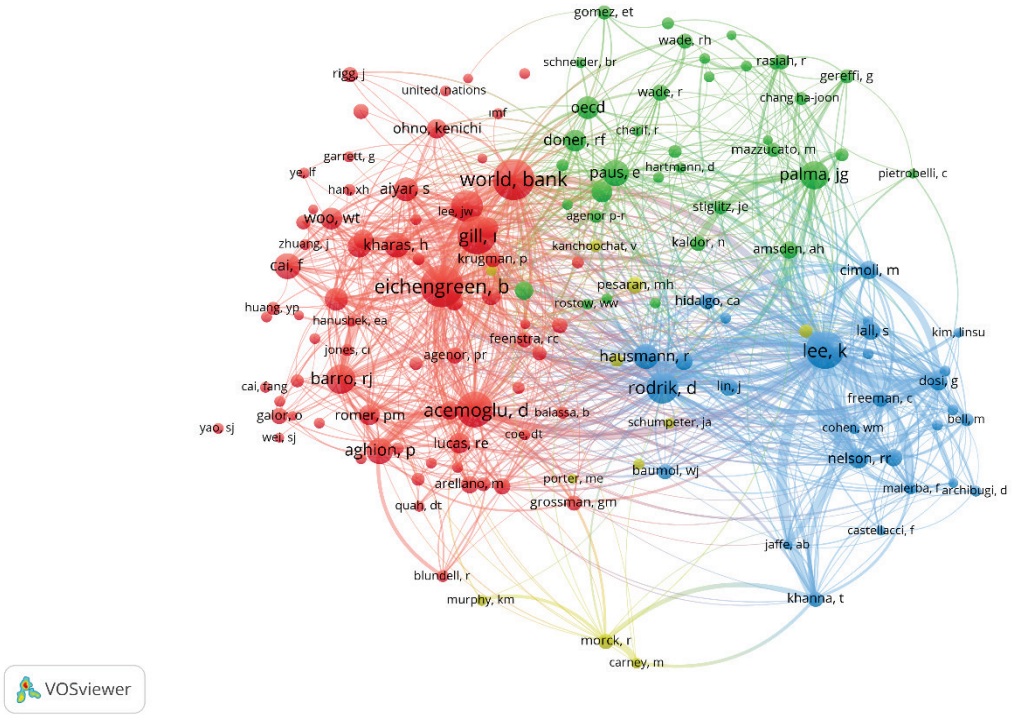

Figure 6. Co-authorship Networks between Authors

Red Cluster (Foundational Thinkers and Institutional Anchors): The red cluster contains scholars whose work forms the conceptual foundation of the MIT literature, including Gill, Kharas, Eichengreen, Felipe, and institutional authors such as the World Bank. These individuals have made defining contributions to the conceptualization of the trap and the empirical identification of its global manifestations. Notably, Daron Acemoğlu appears in this cluster despite not having authored MIT-specific studies; his influential work on institutions, governance, and inclusive growth provides strategic frameworks that are frequently cited in relation to MIT dynamics.

Blue Cluster (Innovation, Industrialization, and Development Strategy): The blue cluster centers on Lee, Rodrik, Hausmann, Nelson, and Dosi, forming a strong intellectual network focused on structural transformation, innovation systems, and industrial policy. These scholars approach the MIT from the perspective of long-term growth constraints, capability building, and technological upgrading. Their collaborations reflect a shared emphasis on overcoming institutional and industrial bottlenecks through innovation-led development strategies.

Green Cluster (Latin America, Inequality, and Policy Reform): The green cluster, led by Palma, Paus, and Doner, contributes a regionally focused and heterodox perspective to the field. Gabriel Palma (2011; 2019) has written extensively on Latin America and the structural causes of inequality, while Paus

(2012; 2014; 2020) has contributed to the literature with studies on international trade, innovation, and Latin American development. Doner's (2016) work emphasizes the political economy of development, arguing that the MIT is more a product of institutional failures and policy misalignments than of purely economic factors.

Yellow Cluster (Business Systems and Corporate Governance): The yellow cluster is led by Morck, Carney, and Murphy, and is primarily oriented around issues of corporate governance, business systems, and institutional collaboration. While this group contributes to the broader understanding of economic upgrading and private sector dynamics, it occupies a more peripheral position in the MIT literature. The relative marginality of this cluster reflects its narrower scope and more specialized focus.

4.4. Keywords and Conceptual Mapping

Keywords serve as vital descriptors of scholarly content, offering insights into the thematic orientation and conceptual focus of academic publications. In bibliometric analysis, frequently co-occurring keywords strengthen inter-publication linkages, facilitate the development of shared terminology within a field, and enhance the visibility and discoverability of studies during systematic literature searches. As such, the analysis of keyword networks provides a meaningful lens through which to understand the structure and evolution of a research domain.

Figure 7 presents the keyword co-occurrence network derived from author-defined keywords across the 385 publications in the sample. Using VOSviewer, a total of ten distinct keyword clusters were identified, each representing a thematic concentration within the middle-income trap (MIT) literature.

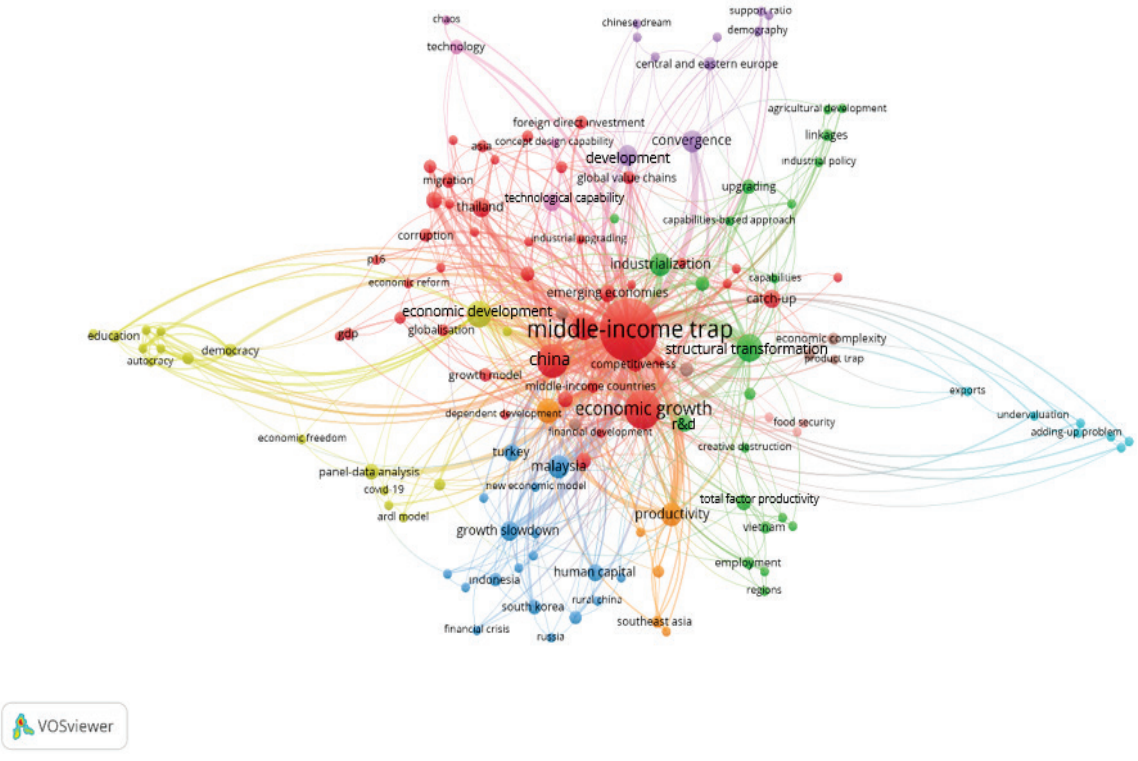

Figure 7. Co-authorship Networks between Keywords

Red Cluster (Core Concepts of the Field): At the center of the network, the red cluster contains the most frequently cited and conceptually central terms. These include: "Middle-income trap" (largest node and most connected term); "Economic growth" (second-largest node and most frequent co-occurrence); "China", which ranks third in size and reflects the country's prominent role in empirical studies; "Innovation", positioned adjacent to the MIT node, indicating its centrality in policy and theory.

This cluster captures the foundational discourse on the MIT and frames the debate around growth slowdowns and country-specific development trajectories, with China serving as the most studied case.

Green Cluster (Structural Determinants of Escape): The green cluster includes terms such as "Structural transformation" (third strongest link to "middle-income trap"); "R&D"; "Industrialization"; "Total factor productivity".

This cluster represents the mechanisms and capabilities necessary for countries to transition beyond middle-income status, emphasizing the importance of innovation systems and industrial upgrading.

Blue Cluster (Empirical Country Cases and Human Capital): The blue cluster is composed of "Growth slowdown", a symptom of stagnation in middle-income economies; "Human capital", a key enabling condition for sustained development; Country-specific terms like "Turkey," "Malaysia," "Indonesia," and "South Korea".

This grouping reflects both the diagnostic elements of the MIT and the regional focus of much of the literature, particularly in emerging Asian economies.

Yellow Cluster (Development Processes and Methodological Approaches): The yellow cluster brings together "Economic development", "Education", "Democracy", "Panel data analysis" and "ARDL model".

This cluster captures the intersection of socioeconomic factors and quantitative methodologies used in evaluating the determinants of the MIT.

Purple Cluster (Convergence and Demographic Dynamics): The purple cluster centers on "Convergence", a common analytical framework for measuring income mobility relative to developed countries, "Development" (the fourth-strongest co-occurring term with MIT), "Demography", which highlights the relevance of demographic transitions for human capital, "Central and Eastern Europe", indicating a regional sub-focus.

This cluster reflects the literature's macroeconomic and demographic orientation, linking structural development with convergence dynamics.

Turquoise Cluster (Trade and Valuation Perspectives): This smaller cluster includes "Economic transition", "Exports", "Undervaluation".

While these terms have relatively small nodes, they point to trade and currency strategies occasionally discussed as potential escape mechanisms.

Orange Cluster (Productivity and Regional Focus): Despite its limited size, the orange cluster includes "Productivity" (fifth most connected keyword to MIT), "Latin America", a region frequently cited in MIT-related stagnation studies.

The centrality of "productivity" underscores its diagnostic value for assessing economic transformation capacity.

Brown and Pink Clusters (Technological Depth and Product Space): Two peripheral clusters capture technological and structural sophistication: Brown: "Economic complexity" and "product trap"; Pink: "Technological capability" and "technology".

Though these terms appear infrequently, they reflect emerging discourses around innovation ecosystems and export sophistication as pathways out of the MIT.

In summary, the keyword co-occurrence map reveals a multi-layered conceptual structure that balances theoretical foundations (growth, innovation, development), empirical foci (country case studies, regional clusters), and applied themes (structural transformation, productivity, education). The prominence of terms like "economic growth," "structural transformation," and "human capital" affirms the multidisciplinary nature of MIT research, while peripheral clusters suggest areas for future expansion and integration.

5. Keyword Co-occurrence Analysis

5.1. Thematic Evolution and Strategic Mapping

To explore the intellectual development of the MIT literature, this study employed the SciMAT to generate strategic diagrams across three periods: 2009–2013, 2014–2017, and 2018–2025. Each strategic diagram visualizes the conceptual structure of the field at a given time, offering insights into the evolution of key research themes and their relative maturity, relevance, and integration.

Thematic clusters—represented as nodes in the diagrams—were formed by aggregating co-occurring keywords. The horizontal axis (centrality) measures a theme's connectivity to other themes (i.e., its relevance within the field), while the vertical axis (density) captures the internal coherence of the theme (i.e., how well-developed the topic is internally) (López-Robles et al., 2021; Bagheri et al., 2024).

Following the SciMAT framework (Salazar-Concha et al., 2021), strategic diagrams are divided into four quadrants:

Upper-right quadrant: Motor themes – high centrality and high density; conceptually mature and strategically important.

Upper-left quadrant: Highly developed but isolated themes – high density, low centrality; internally strong but peripheral to the field.

Lower-left quadrant: Emerging or declining themes – low density and centrality; conceptually weak or fading topics.

Lower-right quadrant: Basic and transversal themes – high centrality but low density; fundamental to the field, but not yet fully developed.

5.1.1. First Period (2009–2013): Conceptual Emergence and Foundational Framing

The first period marks the formative phase of MIT scholarship, comprising only 31 publications. During this time, the field began to coalesce around a small number of core issues.

As shown in Figure 8, ten thematic clusters were identified, classified as follows:

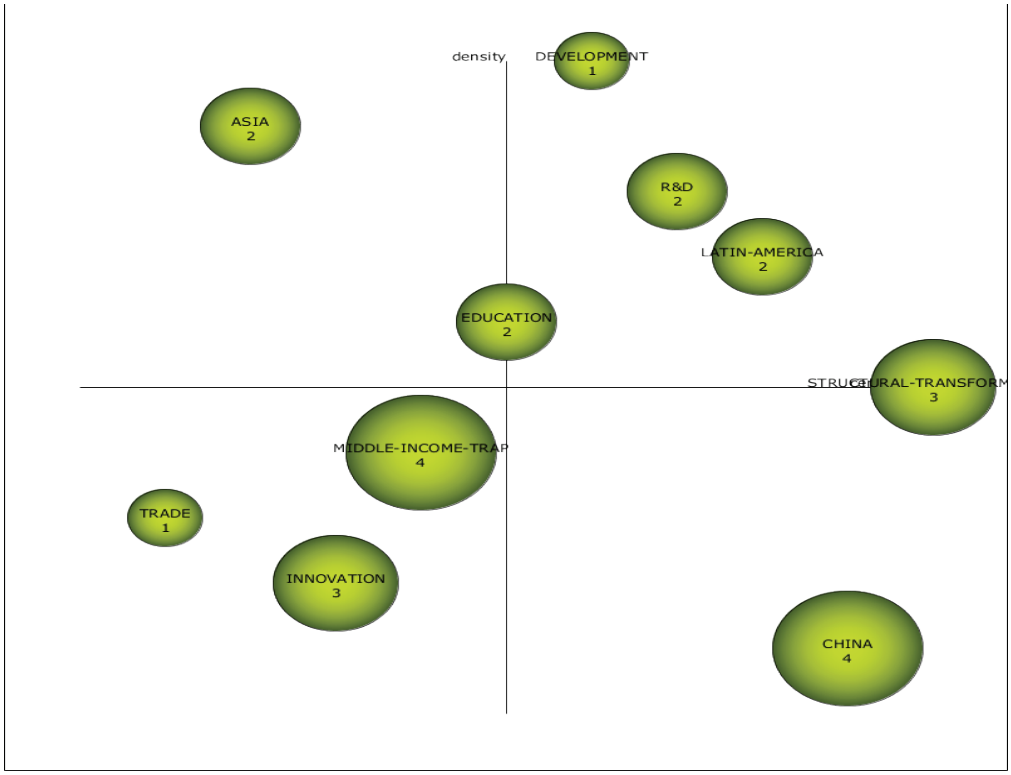

Figure 8. Strategic Diagram for the First Period (2009-2013)

Motor themes: R&D, Education, Structural Transformation, Latin America, and Development

Isolated theme: Asia

Emerging/declining themes: Trade, Middle-Income Trap, Innovation

Basic theme: China

This distribution reveals several important trends in the early conceptualization of the MIT:

R&D emerged as a dominant theme, reflecting early efforts to explain how innovation and technological upgrading are crucial for transitioning from labor-intensive to knowledge-intensive growth models. As many countries in the MIT are characterized by stagnant productivity, the prominence of this theme underscores the centrality of innovation systems in development discourse.

Closely linked to R&D, education was also identified as a motor theme. Education is understood as the foundation of human capital formation, which in turn supports research and innovation capacities.

Structural transformation, the shift from low-productivity to high-productivity sectors, was another central focus. Its position as a motor theme reflects growing academic consensus that escaping the MIT requires deep changes in economic structure, not merely incremental growth.

The Latin American region, home to numerous countries long identified with the trap (e.g., Brazil, Argentina, Mexico), also emerged as a motor theme. In contrast, while the Asian region was thematically coherent, its classification as isolated suggests it had not yet assumed a central position in the global discourse—an observation that would shift in later periods.

The presence of "middle-income trap" itself in the lower-left quadrant—as an emerging theme—aligns with its historical trajectory. This period represents the term's conceptual emergence, following Gill and Kharas's (2007) foundational work. As such, its peripheral status reflects its novelty and lack of widespread integration at the time.

Development, classified as a motor theme, reflects the field's theoretical grounding in the broader domain of development economics, encompassing not just economic growth but also institutional and social dimensions.

China, though appearing only as a basic theme, begins to take on importance due to its rapidly evolving growth trajectory and frequent use as a case study in MIT-related analyses.

To supplement the qualitative interpretation, performance indicators (e.g., publication count, h-index, citation volume) were also calculated for each theme and are presented in Table 2.

Table 2. Performance of themes in the first period (2009-2013)

Topics	Number of Publications	h-Index	Average Citation	Centrality	Density
R&D	2	2	173	40	65
EDUCATION	2	1	20	28.77	42.5
STRUCTURAL TRANSFORMATİON	3	3	20	56.79	39.11
LATIN-AMERICA	2	1	6.5	41.72	57.22
DEVELOPMENT	1	1	4	36.61	146.67
ASIA	2	2	10	17.91	130
TRADE	1	1	46	5.11	25
MIDDLE-INCOME-TRAP	4	2	19	27	27.27
INNOVATION	3	2	6.33	26.33	25
CHINA	4	2	1.75	48.7	16

In summary, the first period is characterized by a transition from conceptual diffusion to thematic crystallization. The foundational themes identified—R&D, education, structural change, and development—would shape the analytical core of subsequent research on the middle-income trap.

5.1.2. Second Period (2014–2017): Conceptual Expansion and Structural Deepening

The second period of analysis, covering the years 2014 to 2017, represents a phase of conceptual expansion and empirical consolidation in the middle-income trap (MIT) literature. A total of 120 publications were recorded during this interval, reflecting a significant growth in scholarly engagement with the topic. As shown in Figure 9, this period yielded 18 thematic clusters, classified according to SciMAT's strategic diagram typology as follows:

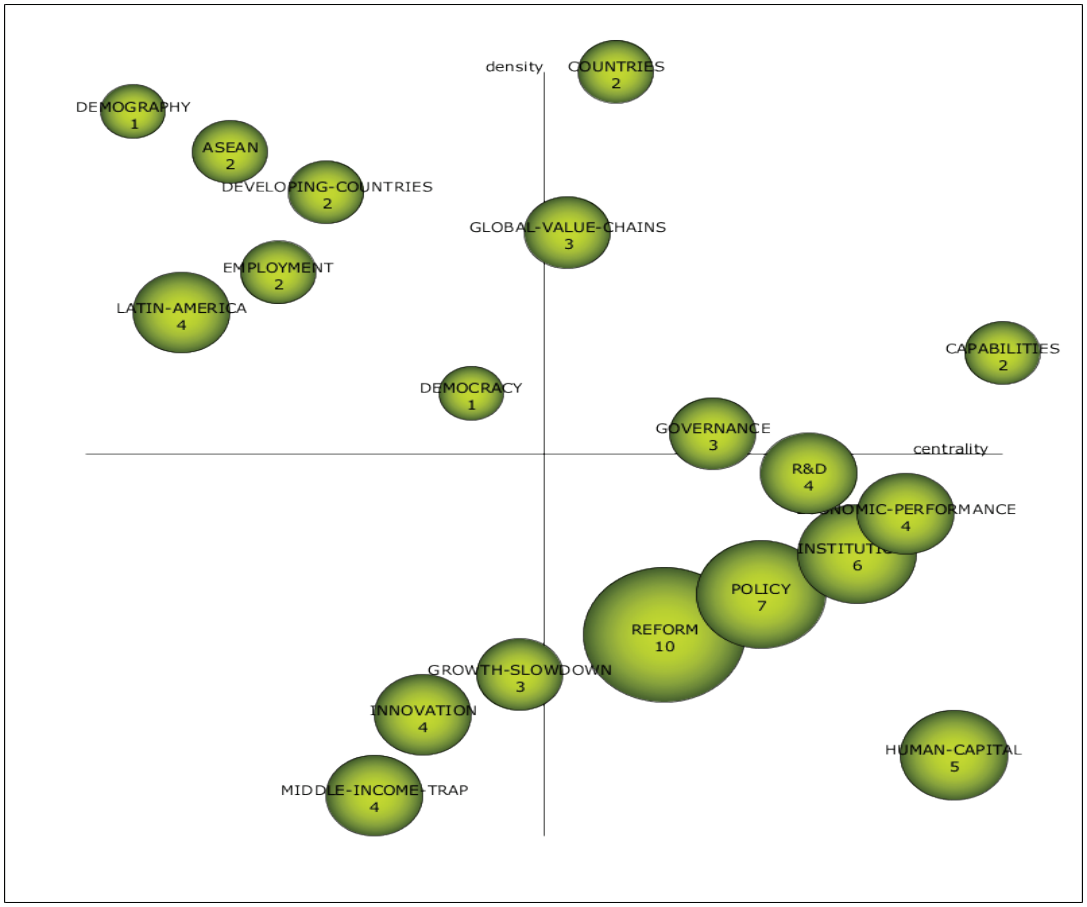

Figure 9. Strategic Diagram for the Second Period (2014-2017)

Motor themes: Global-Value-Chains, Capabilities, Governance, Countries

Isolated but internally developed themes: Employment, Democracy, Developing Countries, Latin America, ASEAN, Demography

Emerging or declining themes: Growth Slowdown, Innovation, Middle-Income Trap

Basic and transversal themes: Policy, R&D, Reform, Human Capital, Institutions, Economic Performance

The thematic landscape of this period reflects a transition from foundational framing to more differentiated and policy-relevant exploration. Several key developments define the structure of the field during this time:

Global Value Chains as a Dominant Theme: The most prominent motor theme—based on both strategic positioning and performance indicators (see Table 3)—is Global-Value-Chains (GVCs). The literature increasingly focused on the hypothesis that countries remain trapped at middle-income levels because they fail to upgrade within international production networks. Rather than simply participating in global

trade, the ability to move up the value chain—producing higher-value-added goods and services—became a focal point for understanding development blockages. This thematic shift reflects a broader global turn in development economics toward production structure and trade integration strategies.

Capabilities and Institutional Support: The theme of Capabilities also emerged as a motor theme, signaling growing recognition that country-specific endowments and institutional capacities critically mediate the likelihood of escaping the MIT. Scholars began to emphasize that even when facing similar structural barriers, countries' ability to innovate, implement policy, or leverage human capital depends on endogenous capacity. As such, capabilities became a conceptual bridge linking microeconomic firm-level factors to macro-level development trajectories.

Governance and Policy Alignment: Closely related to capabilities, the Governance theme reflects increased attention to the institutional prerequisites for successful transformation. This included analyses of bureaucratic quality, policy coherence, and rule of law—all recognized as central to enabling long-term productivity growth. Governance is framed not just as an administrative concern, but as a strategic enabler of reform and innovation systems.

The Continued Emergence of the Middle-Income Trap Concept: Interestingly, the keyword "Middle-Income Trap" itself remains classified as an emerging theme during this period. This positioning suggests that while the concept had gained traction since its introduction, it was still undergoing conceptual clarification and empirical validation. Similarly, Growth Slowdown—an observable symptom often associated with countries caught in the trap—also appears as an emerging theme. Its position is consistent with a parallel line of inquiry led by Eichengreen et al. (2014), which linked decelerating growth trajectories to structural and policy deficiencies in upper-middle-income countries.

Peripheral but Relevant Themes: Themes such as ASEAN, Demography, and Latin America appear in the upper-left quadrant, indicating well-developed but thematically isolated contributions. These region- or context-specific studies added depth to the literature but were not yet fully integrated into the core conceptual framework. Similarly, Human Capital, Policy, Institutions, and Reform are located in the lower-right quadrant, suggesting that while these topics were clearly connected to the MIT discourse, their theoretical frameworks and empirical applications were still maturing.

To supplement the qualitative interpretation, performance indicators (e.g., publication count, h-index, citation volume) were also calculated for each theme and are presented in Table 3.

Table 3. Themes' performance in the second period (2014-2017)

Topics	Number of Publications	h-Index	Average Citation	Centrality	Density
GLOBAL-VALUE-CHAINS	3	3	22.33	27.61	35.42
CAPABILITIES	2	2	14	49.69	25.56
GOVERNANCE	3	2	6	31.85	17.5
COUNTRIES	2	2	4	29.13	86.67
EMPLOYMENT	2	1	19	18.07	31.11
DEMOCRACY	1	1	13	25.85	22.25
DEVELOPMENT-COUNTRIES	2	2	10	20.02	36.11
LATIN-AMERICA	4	2	8.25	14.3	29.33
ASEAN	2	2	4.5	16.61	49.58
DEMOGRAPY	1	1	1	3.33	50
GROWTH-SLOWDOWN	3	2	26.67	25.89	7.58
INNOVATION	4	4	20.25	24.88	5.33
MIDDLE-INCOME-TRAP	4	1	1	23.66	1.27

POLICY	7	5	21.29	32.2	8.78
R&D	4	3	20.25	33.28	13.33
REFORM	10	6	19.7	31.67	8.73
HUMAN-CAPITAL	5	4	17.4	46.65	4.94
INSTITUTIONS	6	5	14.33	35.74	10
ECONOMIC-PERFORMANS	4	4	13.75	37.31	13.33

In summary, the 2014–2017 period reflects a conceptual maturation and policy intensification of the MIT literature. The emergence of GVCs, capabilities, and governance as motor themes illustrates a shift from early descriptive work toward actionable development strategies. The strategic map also highlights the beginning of a multi-scalar research agenda, in which firm-level, sectoral, institutional, and global trade perspectives are increasingly integrated into analyses of the middle-income trap.

5.1.3. Third Period (2018–2025): Thematic Diversification and Theoretical Reassessment

The third period, covering the years 2018 to 2025, marks the most expansive and analytically diverse phase in the evolution of the middle-income trap (MIT) literature. With a total of 234 publications, this period reflects a notable acceleration in academic interest following the foundational (2009–2013) and developmental (2014–2017) phases.

As illustrated in Figure 10, 23 thematic clusters emerged, distributed as follows:

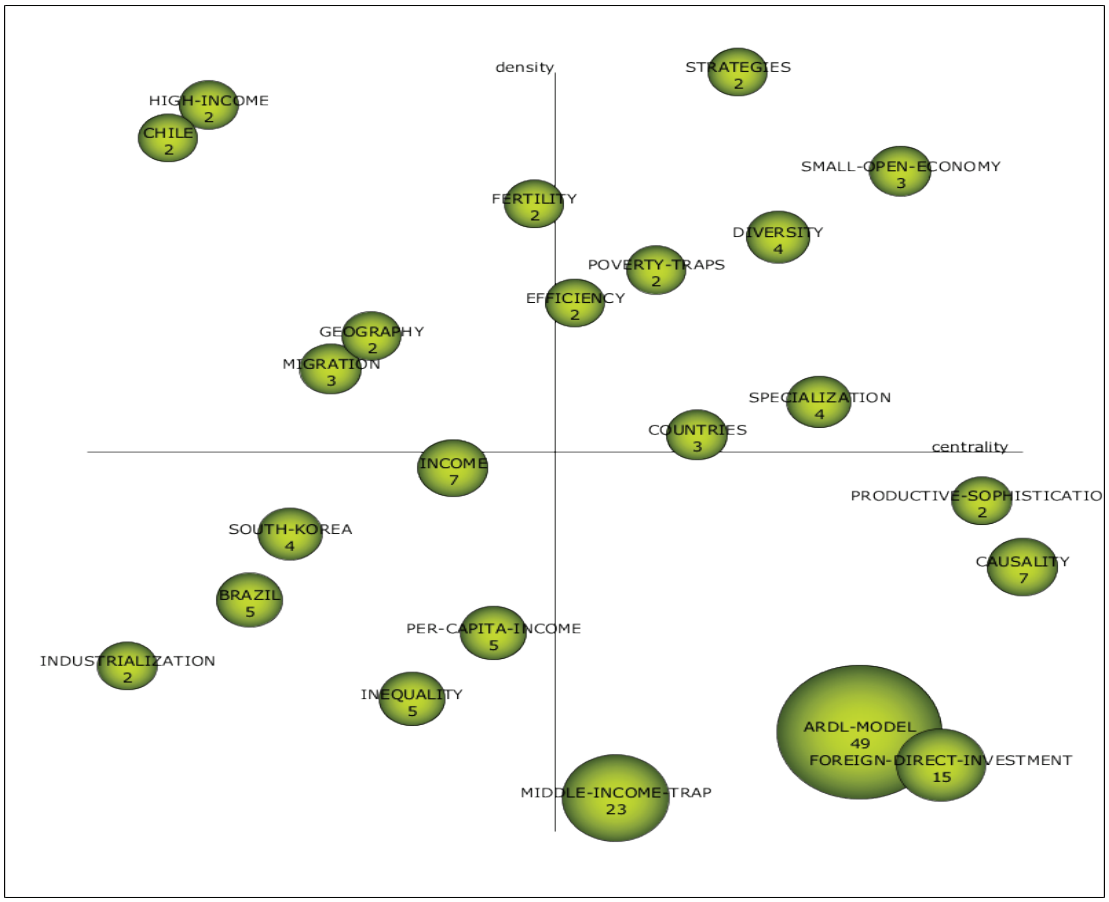

Figure 10. Strategic Diagram for the Third Period (2018-2025)

Motor themes (high centrality and high density): Countries, Strategies, Small-Open-Economy, Poverty Traps, Diversity, Efficiency, Specialization

Isolated but internally developed themes: Geography, Chile, Fertility, Migration, High Income

Emerging or declining themes: South Korea, Income, Per Capita Income, Brazil, Industrialization, Inequality

Basic and transversal themes: Productive Sophistication, Middle-Income Trap, Foreign Direct Investment, ARDL Model, Causality

The Poverty Trap as a Precursor to the Middle-Income Trap: Among the motor themes, Poverty Traps stands out as a critical conceptual addition. The literature increasingly recognizes that the MIT cannot be fully understood in isolation from earlier developmental constraints. The poverty trap, which refers to the inability of countries to escape low-income status due to structural and scale limitations, is now seen as a foundational stage that precedes the middle-income transition. This emerging framework suggests that unresolved issues in the poverty trap stage can persist and re-emerge as vulnerabilities at the middle-income level. Thus, the rise of "poverty trap" as a high-performance theme in this period reflects a more comprehensive, process-oriented approach to development trajectory analysis.

Diversification, Specialization, and Structural Constraints in Open Economies: Three additional motor themes—Diversity, Specialization, and Small-Open-Economy—build upon the value chain discourse that dominated the second period. These themes reflect an increasing focus on productive structure and trade dynamics in countries attempting to upgrade their position in global markets. Scholars in this period began interrogating whether small open economies are capable of achieving both product diversification and deep specialization, and under what conditions this dual transformation is feasible.

Product diversity is essential to buffer against sectoral shocks and enable innovation spillovers, while specialization is necessary to move up the value chain and increase value-added exports. However, small economies often lack the scale to pursue both simultaneously. This analytical tension has become a core debate within the third-period literature, particularly in the context of integration into global value chains (GVCs) and industrial policy design.

Efficiency as a Prerequisite for Upgrading: The emergence of Efficiency as a motor theme reflects a growing emphasis on the role of resource allocation, institutional effectiveness, and technological productivity in supporting both diversity and specialization. In this period, efficiency is increasingly positioned not merely as an outcome but as a strategic enabler of successful economic transformation, especially for economies facing structural or demographic constraints.

Middle-Income Trap (Increased Centrality, Limited Internal Coherence): A noteworthy observation is the shifting position of the "Middle-Income Trap" keyword itself. Unlike in the previous periods—where it was classified as an emerging theme—MIT is now positioned in the lower-right quadrant, indicating high centrality but relatively low density. This suggests that while the concept has become integral to the field, its internal theoretical development remains incomplete.

Despite growing usage and citation frequency, fundamental debates persist regarding:

i. The quantitative thresholds defining the trap
ii. The duration a country must remain at middle-income levels to be classified as "trapped"
iii. The conditions for escape and how long a country must sustain high-income status to be considered successful

These unresolved issues highlight a lack of theoretical consolidation, which continues to limit the field's analytical precision. The thematic map thus reflects a paradox: the middle-income trap has become central to development discourse, yet its conceptual boundaries remain contested, and its operationalization inconsistent across studies.

To supplement the qualitative interpretation, performance indicators (e.g., publication count, h-index, citation volume) were also calculated for each theme and are presented in Table 4.

Table 4. Themes' performance in the Third period (2018-2025)

Topics	Number of Publications	h-Index	Average Citation	Centrality	Density
COUNTRIES	3	2	21.67	21.57	7.3
STRATEGIES	2	1	19	22.89	27.5
SMALL-OPEN-ECONOMY	3	3	16.33	25.29	16.96
POVERTY-TRAPS	2	2	14.5	21.53	15
DIVERSITY	1	2	8.25	22.9	15.32
EFFICIENY	2	1	4.5	19.11	11.07
SPECIALIZATION	4	1	1.5	23.2	7.35
GEOGRAPY	2	1	37.5	16.46	9.92
CHILE	2	1	9	10.3	16.97
FERTILITY	2	1	3	16.8	15.8
MIGRATION	3	2	1.33	16.44	7.5
HIGH INCOME	2	1	1	14.25	21.17
SOUTH-KOREA	4	3	12.75	15.68	7.14
INCOME	7	4	10	16.59	7.21
PER-CAPITA-INCOME	5	3	8.2	16.69	3.09
BRAZIL	5	3	3	14.87	3.98
INDUSTRIALIZATION	2	2	3	4.94	2.5
INEQUALITY	5	2	1	16.59	2.17
PRODUCTIVE-SOPHISTICATION	2	2	22	28.67	7.19
MIDDLE-INCOME-TRAP	23	10	12.78	19.31	0.36
FOREIGN-DIRECT-INVESMENT	15	6	7.87	28.35	1.23
ARDL MODEL	49	10	7.47	24.64	1.79
CAUSALITY	7	3	2.71	32.42	6.85

In sum, the third period is characterized by a broadening of analytical scope, incorporating upstream development challenges (poverty traps), sectoral transformation dynamics (diversity, specialization, efficiency), and cross-cutting macroeconomic structures (small open economies). The field has matured substantially in empirical richness, yet still seeks greater theoretical integration and definitional consensus to advance as a unified research program.

5.2. Overlap Graph and Thematic Evolution Map

To capture the longitudinal development of research within the middle-income trap (MIT) literature, this study employed SciMAT to construct both an overlap graph and a thematic evolution map. These visualizations allow for a dynamic, periodized representation of how research topics emerge, persist, or diverge over time—offering a deeper understanding of the field's internal continuity and expansion.

Figure 11 presents the overlap graph, which illustrates the degree of thematic stability and transformation across three defined periods: 2009–2013, 2014–2017, and 2018–2025. In this figure, the numbers inside the circles indicate the total number of keywords identified within each period. Upward-pointing arrows denote keywords that disappear in the transition to the next period, while downward-pointing arrows represent newly introduced terms. Horizontal arrows capture the number of overlapping

keywords between successive periods, with the number outside the parentheses indicating the absolute count and the value within parentheses denoting the stability index (Salazar-Concha et al., 2021).

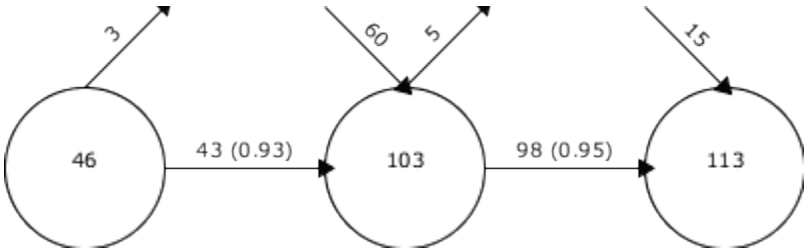

Figure 11. Overlap Graph

The results point to a consistent enrichment of the field over time. In each successive period, the number of new keywords exceeds the number of disappearing terms, signifying both conceptual diversification and thematic renewal. Moreover, the increasing number of overlapping terms and the high stability indices—0.93 between the first and second periods and 0.95 between the second and third—indicate a high degree of conceptual continuity. This suggests that the MIT literature has matured along a stable trajectory, gradually incorporating new dimensions while retaining a strong foundational core.

Complementing this, Figure 12 illustrates the thematic evolution map, which traces the transformation and interconnection of clustered themes across the same three periods. Each column represents a temporal segment, while each node corresponds to a thematic cluster. The size of the nodes reflects the number of publications associated with each theme, and the lines connecting nodes indicate the continuity or divergence of topics across periods. Solid lines represent direct thematic continuity, whereas dashed lines denote thematic differentiation. The thickness of the lines signifies the intensity of keyword overlap: thick solid lines indicate robust continuity, while thick dashed lines suggest strong thematic heritage despite transformation (Cobo et al. 2012).

Several key observations emerge from this thematic trajectory:

In the first period, the dominant themes include “CHINA” and “MIDDLE-INCOME-TRAP”, which serve as foundational anchors for subsequent scholarly inquiry.

In the second period, themes such as “POLICY”, “REFORM”, and “INSTITUTIONS” rise to prominence, reflecting a shift from conceptual framing to policy-oriented analysis.

In the third period, “MIDDLE-INCOME-TRAP” remains central, now joined by methodological themes like “ARDL MODEL”, signaling a growing emphasis on empirical precision.

Strong thematic continuities are visible in several areas. Notably:

The thickest solid lines appear between “ASIA” (Period 1) and “ASEAN” (Period 2), “R&D” (Periods 1 and 2), and “EDUCATION” (Period 1) and “HUMAN CAPITAL” (Period 2). These connections highlight stable conceptual lineages and sustained interest in capacity-building themes.

Among the dashed lines, a notable link connects “LATIN AMERICA” (Period 1) with “POLICY” (Period 2), suggesting a thematic shift from regional focus to institutional reform discourse, underpinned by a shared conceptual foundation.

Taken together, these findings underscore the increasing thematic complexity and analytical depth of the MIT literature over time. While the first period is marked by a relatively limited number of themes and weaker inter-thematic transitions, the second and third periods show a clear acceleration in thematic diversification and evolutionary potential. This trend reflects the field’s transition from early conceptual exploration to more sophisticated, policy-relevant, and methodologically robust scholarship.

Figure 12 shows the origin of clustered topics and their relationship with each other. Columns represent periods; nodes represent clustered themes; the size of nodes shows the number of publications of the relevant theme. The connection lines between nodes express the flow of data. They are divided into two as dashed and solid lines. Dashed lines indicate that topics are differentiated; solid lines indicate topic continuity; the thickness of lines shows the strength of connections. Solid thick lines represent topic

continuities with strong connections. Dashed thick lines indicate that although topic differentiation occurs, keywords that continue between topics have high connectivity (Cobo et al. 2012). According to Figure 12, the increase in research themes throughout the process indicates that the content of the subject has been enriched and a significant evolution has taken place in the relevant field. "CHINA" and "MIDDLE-INCOME-TRAP" in the first period, "REFORM," "POLICY," and "INSTITUTIONS" in the second period, and "ARDL-MODEL" and "MIDDLE-INCOME-TRAP" in the third period are the most studied themes. Additionally, among the solid lines in the first period, the thickest connections are between "ASIA" in the first period and "ASEAN" in the second period; between "R&D" in the first period and "R&D" in the second period; between "EDUCATION" in the first period and "HUMAN CAPITAL" in the second period. Among the dashed lines, it is between "LATIN AMERICA" in the first period and "POLICY" in the second period. Therefore, this means that the stability between these themes is supported by a strong thematic heritage relationship. In general, the number of themes in the first period is low and its ability to evolve is relatively weak compared to other periods. In subsequent periods, the number of themes and the ability of themes to evolve increased.

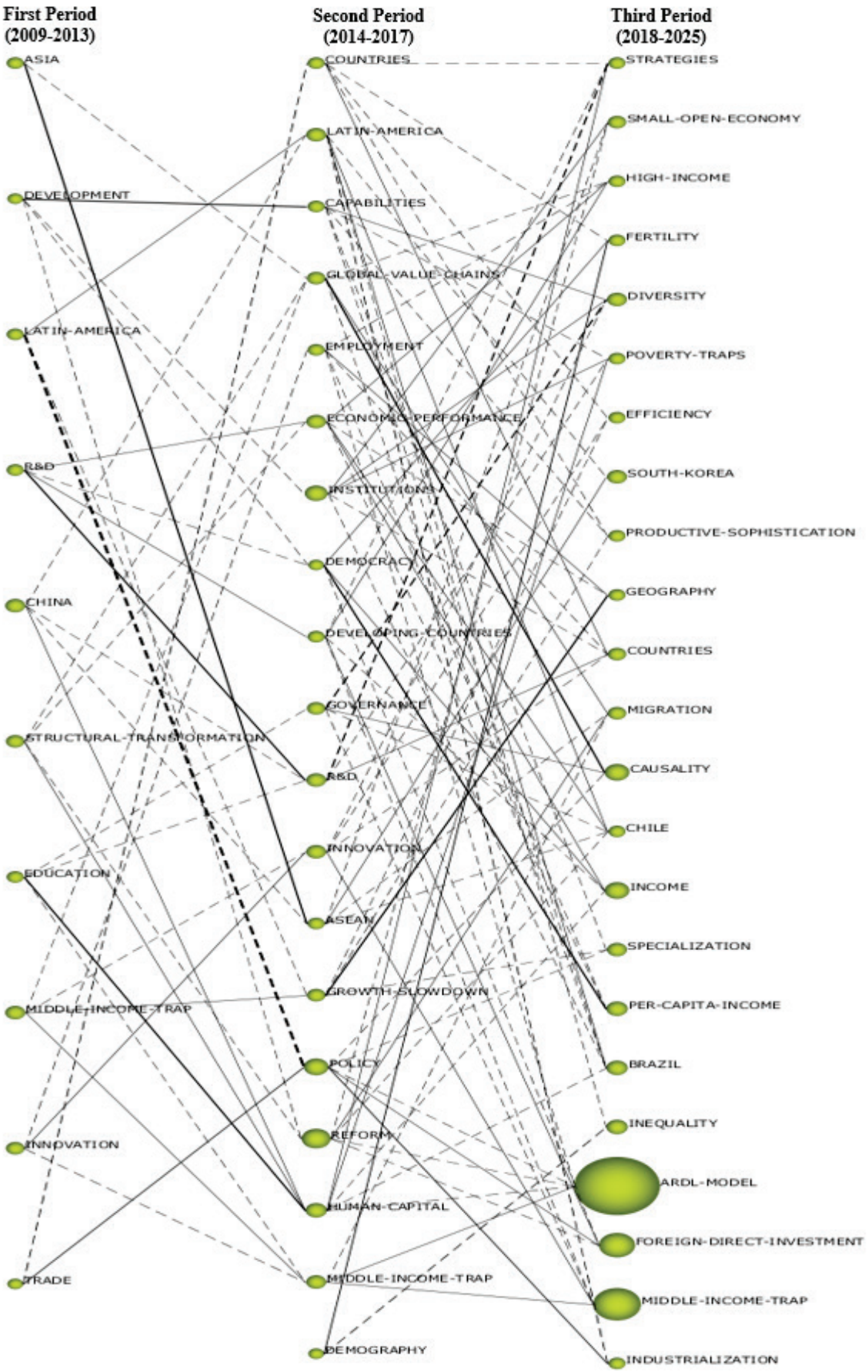

Figure12. Thematic Evolution Map

6. Conclusion

This study provides the first systematic bibliometric mapping of the scholarly discourse surrounding the middle-income trap (MIT)—a concept that, since its formal articulation in 2007, has become a defining concern within development economics. Leveraging a dataset of 385 publications indexed in Web of Science between 2009 and 2025, and employing three complementary tools—Bibexcel, VOSviewer, and SciMAT—this research offers a detailed portrait of the field's evolution, from conceptual emergence to empirical and thematic diversification.

Unlike traditional literature reviews, this bibliometric approach enables a more precise and multi-layered examination of the field. Through performance analysis and science mapping, we identify key contributors, thematic concentrations, and collaborative patterns that have shaped how the MIT has been understood, debated, and operationalized over time. In doing so, the study not only charts the terrain of existing research but also clarifies where theoretical consolidation remains absent and where empirical gaps persist.

Three central conclusions arise from this analysis.

First, the MIT should not be regarded as a fixed condition or static typology, but rather as an evolving analytical framework that reflects broader transformations in development thinking. The growing prominence of the "poverty trap" theme in recent years, particularly in the third period of analysis (2018–2025), indicates a more integrated perspective on long-term development. Scholars increasingly recognize that the barriers faced at the middle-income stage are often rooted in constraints inherited from earlier phases of growth. This shift reflects a move from treating the MIT as a symptom to understanding it as part of a longer developmental continuum.

Second, the regional and disciplinary structure of the field reveals clear spatial and intellectual clustering. Asia—particularly countries such as China, Malaysia, Thailand, and South Korea—emerges as both the geographic focus and institutional driver of much of the literature. This is reflected not only in case study selection but also in the origin of leading journals and collaborative networks. However, the inclusion of countries such as Brazil, Turkey, and others in Latin America demonstrates that the MIT is not a regionally bounded issue. Rather, it presents a global challenge whose dynamics are shaped by context-specific institutional, demographic, and structural variables.

Third, while the MIT has become increasingly central to development discourse, it remains theoretically underdeveloped. Its bibliometric position—marked by high centrality but moderate density—underscores this paradox. Despite widespread usage in policy and academic circles, the concept continues to lack clear definitional boundaries: there is still no consensus on how long a country must remain in the middle-income range to be considered "trapped," what qualifies as "escape," or how to quantify the thresholds of transition. This conceptual ambiguity limits the coherence of the field and signals the need for further theoretical refinement.

Taken together, these findings provide both diagnostic clarity and forward-looking insight. For scholars, this study highlights underexplored intersections between development theory, political economy, and institutional change—pointing toward the need for more integrative and interdisciplinary models. For policymakers, particularly in countries seeking to break through the middle-income barrier, the findings offer an evidence-based synthesis of the factors most frequently associated with stagnation and success. Issues such as structural transformation, technological upgrading, productivity, R&D investment, and education consistently emerge as focal points for reform and strategic intervention.

Ultimately, bibliometric analysis offers more than a retrospective account of scholarly production; it provides a conceptual roadmap for the field's future trajectory. As global development challenges become more complex, fragmented, and interdependent, understanding the structural impediments to long-term growth—such as those embedded in the middle-income trap—will be essential. A more cohesive, empirically grounded, and theoretically robust MIT literature is thus not only desirable, but necessary, to inform both research agendas and policy frameworks moving forward.

References

Agénor, P. R., 2017. Caught in the Middle? The Economics of Middle-Income Traps. Journal of Economic Surveys, 31(3), 771-791. Available at: https://onlinelibrary.wiley.com/doi/full/10.1111/joes.12175?casa_token=8bUjhltQ-4IAAAAA:W5OxxZQv33XG8QQzmgqY2CtL4GmswvM2cyq0x03EoPLic5mI8SoY_DH5YEp30fW8qxupAEb_rTCLle72

Aiyar, S., Duval R., Puy D., Wu Y., & Zhang L. (2018). Growth slowdowns and the middle-income trap. *Japan and the World Economy 48*, 22-37. Available at: https://www.sciencedirect.com/science/article/pii/S0922142518300823?casa_token=ZfDob-ysPQQAAAAA:JjdOksxwGwuf7_117EzcihQXd2_1Tn3dsjLM_SjxoRFdf9zQZzTHfq1WHU9LtErDmrg_juofab4

Bagheri, B., Azadi H., Soltani A., & Witlox F. (2024). Global city data analysis using scimat: A bibliometric review. *Environment, Development and Sustainability 26*(6), 15403-15427. Available at: https://link.springer.com/content/pdf/10.1007/s10668-023-03255-4.pdf

Callon, M., Courtial J. P., & Laville F. (1991). Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemsitry. *Scientometrics, 22*(1), 155–205. Available at: https://link.springer.com/content/pdf/10.1007/BF02019280.pdf

Cobo, M. J., Lopez-Herrera A. G., Herrera-Viedma E., & Herrera F. (2012). Scimat: A new science mapping analysis software tool. *Journal of the American Society for Information Science and Technology, 63*(8), 1609–1630. Available at: https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/asi.22688?casa_token=ufVKCZtlmksAAAAA:9jeShHB_GK4bUn6UXrMwalaVFzFuzypzSRlGqAf8IhufdCT7rjMjiv_vmGfkyb8LJpBl06KoBDuwQXsA

Cobo, M. J., Martinez M. A., Gutierrez-Salcedo M., Fujita H., & Herrera-Viedma E. (2015). 25 years at knowledge-based systems: A bibliometric analysis. Knowledge-Based Systems 80, 3–13. Available at: https://www.sciencedirect.com/science/article/pii/S0950705115000076?casa_token=oU-pln63kCQAAAAA:57czYOH3qkD3MzPFVKVV53JKW6eRxaSgUrvNSK3egiSBG-v7tK_0lm-1mJG09BcspAliltMaxPA

Ding, Y. & Cronin B. (2011). Popular and/or Prestigious? Measures of Scholarly Esteem. *Information Processing & Management 47*(1), 80–96. Available at: https://www.sciencedirect.com/science/article/pii/S0306457310000087?casa_token=tcoUDWltXgoAAAAA:pOxgW75qghEd13umY1EL2jkD0ePOkgdMzPmMlK0P3c1X2pHmlStxQoxRHY6dGYWR3gY2BlhLdw0

Doner, R. F. & Schneider B. R. (2016). The Middle-Income Trap: More Politics than Economics. *World Politics 68*(4): 608-644. Available at: https://www.jstor.org/stable/pdf/26347364.pdf?casa_token=1U_bo6ZUShwAAAAA:uAljY2GfkIselvH1TjwRmprrbmZ2F_0YyrCwM_w77wQUcwG7ByO4vkuRQVLaI2TrxoQY7qNAWC2EwxoG3aaTnLNgwqHwQIXpMp81qoRSEcaf5ie_A5qS

Eichengreen, B., Park D., & Shin K. (2012). When fast-growing economies slow down: international evidence and implications for China. *Asian Economic Papers 11*(1), 42-87. Available at: https://scholar.google.com/scholar?hl=tr&as_sdt=0%2C5&q=Eichengreen%2C+B.%2C+Park+D.%2C+%26+Shin+K.+%282012%29.+When+fast-growing+economies+slow+down%3A+international+evidence+and+implications+for+China.+Asian+Economic+Papers+11%281%29%2C+42-87.+&btnG=

Eichengreen, B., Park D., & Shin K. (2014). Growth slowdowns redux. *Japan and the World Economy 32*, 65-84. Available at: https://www.sciencedirect.com/science/article/pii/S0922142514000437?casa_token=crFi7_ie4CAAAAAA:CPDDyfM2vSdgSGe-0flO0sVmuLHdhZ5wirc82I0HMzyY4ueGv0TgvxtemCF6KJ4LMSrJUtM1bwQ

Gill, I. S. & Kharas H. (2007). An East Asian Renaissance: Ideas for Economic Growth. World Bank Publications. (ABD 2007). Available at: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/517971468025502862/an-east-asian-renaissance-ideas-for-economic-growth

Gill, Indermit S. & Kharas Homi. (2015). The Middle-Income Trap Turns Ten. Policy Research Working Paper No.7403. Available at: https://scholar.google.com/scholar?hl=tr&as_sdt=0%2C5&q=Gill%2C+Indermit+S.+%26+Kharas+Homi.+%282015%29.+The+Middle-Income+Trap+Turns+Ten.+Policy+Research+Working+Paper+No.7403&btnG=

Glawe, L. & Wagner H. (2016). The Middle-Income Trap: Definitions, Theories and Countries Concerned—A Literature Survey. *Comparative Economic Studies 58*, 507-538. Available at: https://link.springer.com/article/10.1057/s41294-016-0014-0

Jemghili, R., Ait A., & Khalifa M. (2021). A bibliometric indicators analysis of additive manufacturing research trends from 2010 to 2020. *Rapid Prototyping Journal 27*(7), 1432-1454. Available at: https://scholar.google.com/scholar?hl=tr&as_sdt=0%2C5&q=Jemghili%2C+R.%2C+Ait+A.%2C+%26+Khalifa+M.+%282021%29.+A+bibliometric+indicators+analysis+of+additive+manufacturing+research+trends+from+2010+to+2020.+Rapid+Prototyping+Journal+27%287%29%2C+1432-1454.+&btnG=

Kharas, H. & Kohli H. (2011). What is the Middle Income Trap, why do Countries Fall Into It, And How Can it be Avoided?. *Global Journal of Emerging Market Economies 3*(3), 281-289. Available at: https://journals.sagepub.com/doi/abs/10.1177/097491011100300302

Kong, H., Wang K., Qiu X., Cheung C., & Bu N. (2022). 30 years of artificial intelligence (aı) research relating to the hospitality and tourism industry. *International Journal of Contemporary Hospitality Management 35*(6), 2157-2177. Available at: https://www.emerald.com/insight/content/doi/10.1108/ijchm-03-2022-0354/full/pdf?casa_token=N5JzztRtLn4AAAAA:OSqApS311wlkJRFUROEhERuYX4nxHKrB0uq3Xgqyib2vOz_FrB4KSmwgQDWrfRQVpqMFamebO8K4KzIHLAgInCEe0GLmSHqyquAyKwnoG9Qk5ilhxEF2

Liu, X., Schwaag S., Tagscherer U., & Chang Y. (2017). Beyond catch-up—can a new innovation policy help China overcome the middle income trap?. *Science and Public Policy 44*(5), 656-669. Available at: https://scholar.google.com/scholar?hl=tr&as_sdt=0%2C5&q=Liu%2C+X.%2C+Schwaag+S.%2C+Tagscherer+U.%2C+%26+Chang+Y.+%282017%29.+Beyond+catchup%E2%80%94can+a+new+innovation+policy+help+China+overcome+the+middle+income+trap%3F.+Science+and+Public+Policy+44%285%29%2C+656-669.+&btnG=

López-Robles, J. R., Cobo M. J., Gutiérrez-Salcedo M., Martínez-Sánchez M. A., Gamboa-Rosales N. K., & Herrera-Viedma E. (2021). 30th anniversary of applied intelligence: a combination of bibliometrics and thematic analysis using scimat. *Applied Intelligence 51*, 6547-6568. Available at: https://link.springer.com/article/10.1007/s10489-021-02584-z

Mongeon, P. & Paul-Hus A. (2016). The Journal Coverage of Web of Science and Scopus: A Comparative Analysis. *Scientometrics 106*(1), 213–228. Available at: https://link.springer.com/article/10.1007/s11192-015-1765-5

Murgado-Armenteros, E. M., Gutiérrez-Salcedo M., Torres-Ruiz F. J., & Cobo M. J. (2015). Analysing the conceptual evolution of qualitative marketing research through science mapping analysis. *Scientometrics 102*(1), 519–557. Available at: https://link.springer.com/article/10.1007/s11192-014-1443-z

Palma, J. G. 2011. Homogeneous Middles vs. Heterogeneous Tails, and the end of the 'İnverted-U': It's all about the Share of the Rich. Development and Change 42(1), 87-153. Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-7660.2011.01694.x?casa_token=jXK_eeAvtwMAAAAA:3Pe47iRlk-ebGi_fpdXFN_dAp7dOQ57MjhLaYh4tbrsAs0Cs8Zj0Q-ZuexF6mllOBt-IKhmgRki2eXq_

Palma, J. G. 2019. Behind the Seven Veils of Inequality. What if it's all about the Struggle within just One Half of the Population over just One Half of the National Income?. Development and Change 50(5), 1133-1213. Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1111/dech.12505

Pauna, V. H., Buonocore E., Renzi M., Russo G. F., & Franzese P. P. (2019). the ıssue of microplastics in marine ecosystems: A bibliometric network analysis. *Marine Pollution Bulletin 149*, 110612. Available at: https://www.sciencedirect.com/science/article/pii/S0025326X1930760X?casa_token=V1LFXdz2I6cAAAAA:RswTcbdjOttuAWaUo8B9X0qXV8JOPP7oHyyiWoZEQa6Qo6_uTJd-4vfRZc2h2Qvi7OYvgEGfM2w

Paus, E. 2012. Confronting the Middle Income Trap: İnsights from Small Latecomers. Studies in Comparative İnternational Development 47, 115-138. Available at: https://link.springer.com/article/10.1007/s12116-012-9110-y

Paus, E. 2014. Latin America and the middle income trap. ECLAC, Financing for Development Series (250). Available at: https://scholar.google.com/scholar?hl=tr&as_sdt=0%2C5&q=Paus%2C+E.+2014.+Latin+America+and+the+middle+income+trap.+ECLAC%2C+Financing+for+Development+Series+%28250%29.+&btnG=

Paus, E. 2020. Innovation strategies matter: Latin America's middle-income trap meets China and globalisation. The Journal of Development Studies 56(4): 657-679. Available at: https://www.tandfonline.com/doi/pdf/10.1080/00220388.2019.1595600?casa_token=QJFe-ND15kEAAAAA:lL2sFvFVW4sKm_Qpp4X5T4o_4mGP96VfCAv3F788NEf0VxE-oH-1v68iiUmS3QP8pOG7FxPrydldaYY

Persson, O., Danell R. & Schneider J. W. (2009). How to use bibexcel for various types of bibliometric analysis. *Celebrating Scholarly Communication Studies: A Festschrift for Olle Persson at his 60th Birthday 5*(2009): 9-24. Available at: https://lucris.lub.lu.se/ws/portalfiles/portal/5414075/1459003.pdf#page=12

Qiu, X., Kong H., Wang K., Zhang N., Park S., & Bu, N. (2023). Past, present, and future of tourism and climate change research: bibliometric analysis based on vosviewer and scimat. *Asia Pacific Journal of Tourism Research* 28(1): 36-55. Available at: https://www.tandfonline.com/doi/pdf/10.1080/10941665.2023.2187702?casa_token=y-NZzBP--vwAAAAA:qbyGrDybjJmzJ98h66LngmVZxkAynzkwWJ0ngtH2pGdGx-kiE3VsVpfrpt5v4A7BZTvQQg6crmaTfwI

Salazar-Concha, C., Ficapal-Cusí P., Boada-Grau J., & Camacho L. J. (2021). Analyzing the evolution of technostress: A science mapping approach. *Heliyon* 7(4), e06726. Available at: https://www.cell.com/heliyon/pdf/S2405-8440(21)00829-X.pdf

Small, H. 1999. Visualizing Science by Citation Mapping. Journal of the American Society for Information Science 50(9): 799– 813. Available at: https://www.researchgate.net/profile/Henry-Small-2/publication/220432711_Visualizing_Science_by_Citation_Mapping/links/5cf55c6c4585153c3db187ec/Visualizing-Science-by-Citation-Mapping.pdf

World Bank. 2013. China 2030: Building a Modern, Harmonious, and Creative Societ. World Bank Publications. (ABD 2013). Available at: https://documents1.worldbank.org/curated/en/781101468239669951/pdf/China-2030-building-a-modern-harmonious-and-creative-society.pdf