

# Global Value Chains Research in Development and Business Economics: A Bibliometric Study of Trends and Themes

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## ABSTRACT

This study aims to analyze the development of global value chains (GVC) research within the fields of development and business economics using a bibliometric approach. Data were collected from the Scopus database and analyzed using VOSviewer to identify publication trends, influential articles, collaboration networks, and thematic structures. The results show a consistent increase in the number of publications, indicating growing academic interest in GVC. Citation analysis reveals that highly influential studies are dominated by themes related to digital transformation, sustainability, and global economic systems. Co-authorship analysis highlights the presence of key scholars who act as central connectors within research networks, although collaboration remains partially fragmented. Meanwhile, co-occurrence analysis demonstrates that recent research increasingly integrates topics such as sustainable development, circular economy, and innovation. Overall, the findings suggest that GVC research has evolved into a multidisciplinary field that combines economic, environmental, and technological perspectives. This study contributes to the literature by providing a comprehensive mapping of research trends and identifying future directions for GVC studies.

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## 1. INTRODUCTION

Over the past three decades, the concept of Global Value Chains (GVCs) has become central to understanding how production, trade, and value creation are organized across borders. GVCs describe the full range of activities—design, production, distribution, and consumption—undertaken by firms and workers across different countries to bring a product or service to market [1], [2]. This fragmentation of

production has fundamentally reshaped the global economy, enabling developing countries to participate in international trade not only through final goods but also through specialized stages of production. As a result, GVCs have been widely recognized as a key mechanism for economic development, industrial upgrading, and integration into the global market system [3], [4].

In the context of development economics, GVC participation offers both

opportunities and challenges. On one hand, integration into GVCs allows developing economies to access larger markets, attract foreign direct investment (FDI), and benefit from knowledge and technology transfer [4]. On the other hand, the position of firms and countries within the value chain often determines the extent to which they capture value. Many developing countries remain locked in low-value-added segments, such as assembly or raw material extraction, limiting their ability to achieve sustainable economic upgrading [5], [6]. Consequently, understanding the dynamics of governance, power asymmetries, and upgrading trajectories within GVCs has become a critical research focus.

From a business and management perspective, GVCs are equally important as they shape firm strategies, competitiveness, and innovation processes. Multinational corporations (MNCs) orchestrate complex networks of suppliers and partners, requiring sophisticated coordination mechanisms and governance structures [7], [8]. Firms must continuously adapt to evolving global conditions, including technological change, shifting consumer preferences, and increasing pressure for sustainability and ethical practices. Recent disruptions—such as the COVID-19 pandemic, geopolitical tensions, and supply chain crises—have further highlighted the need for resilience and reconfiguration within global value chains [9]–[11].

Given the growing importance of GVCs, the academic literature on this topic has expanded significantly across multiple disciplines, including economics, international business, economic geography, and development studies. However, this rapid growth has also led to fragmentation in the literature, with diverse theoretical perspectives, methodological approaches, and thematic focuses. While traditional studies have emphasized governance and upgrading, more recent research has incorporated emerging issues such as digitalization, sustainability, environmental, social, and governance (ESG) considerations,

and the role of digital platforms in reshaping value chains.

Despite the richness of this body of research, there remains a need for a systematic and comprehensive mapping of the intellectual structure and evolution of GVC studies. Bibliometric analysis provides a robust methodological approach to address this gap by quantitatively analyzing publication patterns, citation networks, and keyword relationships. Through tools such as co-authorship analysis, co-citation analysis, and keyword co-occurrence mapping, bibliometric methods enable researchers to identify influential works, key contributors, collaboration networks, and emerging research trends.

Therefore, this study aims to analyze the development of GVC research within the domains of development economics and business using a bibliometric approach. Specifically, the study seeks to (1) examine the growth and distribution of publications over time, (2) identify the most influential authors, journals, and institutions, (3) map collaboration patterns among researchers and countries, and (4) uncover the main research themes and their evolution. By doing so, this study contributes to the literature by providing a structured overview of the GVC research landscape, highlighting dominant themes as well as underexplored areas that warrant further investigation.

The findings of this study are expected to offer important implications for both academia and practice. For researchers, the study provides a comprehensive roadmap of existing knowledge and future research directions. For policymakers, the insights can inform strategies to enhance participation and upgrading in global value chains. For practitioners, particularly firms operating in international markets, the study sheds light on evolving trends that may influence strategic decision-making in an increasingly interconnected and uncertain global economy.

## 2. RESEARCH METHODS

### 2.1 *Research Design*

This study adopts a quantitative bibliometric research design to systematically analyze the development, structure, and trends of Global Value Chain (GVC) research within the fields of development economics and business. Bibliometric analysis is widely used to evaluate scientific output by examining patterns in publications, citations, and collaborations. This approach enables an objective and reproducible mapping of the intellectual landscape of a research field. The study employs several bibliometric techniques, including publication trend analysis, co-authorship analysis, citation and co-citation analysis, and keyword co-occurrence analysis. These techniques are used to identify influential works, collaboration networks, thematic structures, and emerging research directions.

### 2.2 *Data Source and Collection*

The dataset used in this study was obtained from the Scopus database, which is recognized as one of the largest and most comprehensive sources of peer-reviewed academic publications [12], [13]. Scopus was selected due to its broad coverage across multiple disciplines, particularly in economics, business, and the social sciences, making it highly suitable for capturing research on Global Value Chains (GVCs). Data collection was conducted using a structured search query designed to identify relevant literature, incorporating keywords such as “global value chain,” “global value chains,” “GVC,” “value chain governance,” and other related terms. To ensure the relevance and quality of the dataset, the search was restricted to titles, abstracts, and keywords.

The inclusion criteria for the dataset were carefully defined to maintain consistency and academic rigor. Only publications within the fields of economics, business, management, and closely related disciplines were included, with a focus on peer-reviewed

journal articles and review papers written in English. Additionally, the time span was limited to publications from 2000 to 2025 to capture both foundational and contemporary developments in the field. After applying these criteria and removing duplicate records, the final dataset consisted of a refined collection of publications that are appropriate and reliable for conducting bibliometric analysis.

### 2.3 *Data Processing and Cleaning*

Before conducting the analysis, the dataset underwent a data cleaning process to ensure accuracy and consistency, which included standardizing author names to avoid duplication caused by variations in initials, harmonizing institutional affiliations, removing incomplete or irrelevant records, and normalizing keywords to merge similar terms such as “GVC” and “global value chains”; this step is essential in bibliometric studies as it enhances the reliability and validity of subsequent network analysis and visualization results.

### 2.4 *Bibliometric Analysis Techniques*

This study employs several key bibliometric techniques to comprehensively analyze the development of Global Value Chains (GVC) research, including publication trend analysis to examine the annual growth of publications and identify the evolution of research activity over time; co-authorship analysis to explore collaboration patterns among authors, institutions, and countries and to identify research networks and leading contributors; citation analysis to assess the impact of publications based on how frequently they are cited, with highly cited works considered influential in shaping the field; co-citation analysis to reveal the intellectual structure and foundational theories by identifying relationships between documents that are frequently cited together; and keyword co-occurrence analysis to examine the frequency and relationships

of keywords, enabling the identification of major research themes, emerging topics, and the visualization of thematic clusters within the literature.

### 2.5 Data Visualization Tool

The bibliometric analysis and visualization in this study were conducted using VOSviewer, a widely used tool for constructing and visualizing bibliometric networks. This software enables the creation of maps based on co-authorship, co-citation, and keyword co-occurrence data, providing intuitive graphical representations of complex relationships within the literature [14], [15]. In this study, VOSviewer was utilized to generate several types of visualizations, including network visualization maps that illustrate relationships among authors, documents, or keywords; overlay visualization maps that show the evolution of research over time; and density visualization maps that highlight

the concentration of research activity within specific areas.

The analytical procedure was carried out through a systematic and structured process to ensure transparency and reproducibility. The stages included data retrieval from the Scopus database using predefined search criteria, followed by data cleaning and preprocessing to ensure consistency and accuracy. Subsequently, descriptive analysis was conducted to examine publication trends, and network analysis was performed using VOSviewer to map co-authorship, co-citation, and keyword relationships. Finally, the results were interpreted to identify key patterns, clusters, and emerging research trends, allowing for a comprehensive understanding of the development of Global Value Chains research.

## 3. RESULTS AND DISCUSSION

### 3.1 Publication Trends

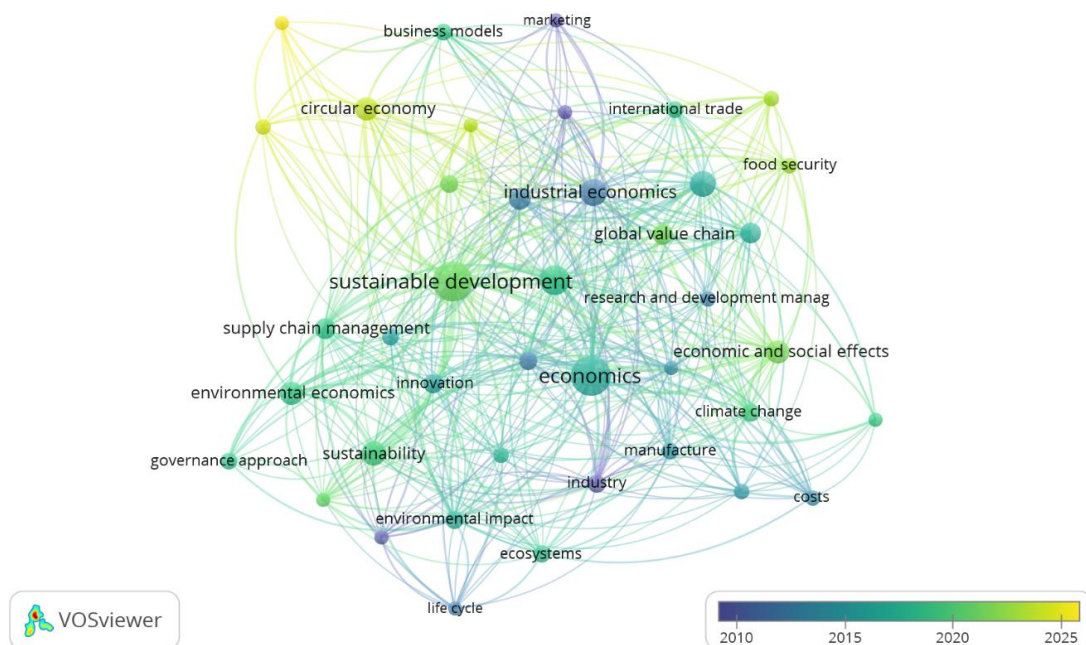


Figure 1. Publications Trends

The interpretation of Figure 1. Publications Trends indicates that research on global value chains has evolved toward more integrated and sustainability-oriented themes over time. Earlier studies (around 2010–2015) were primarily concentrated on core economic

aspects such as industrial economics, manufacturing, and costs. However, more recent publications (closer to 2020–2025) show a clear shift toward topics like sustainable development, circular economy, food security, and environmental impact. The dense

network of interconnected keywords suggests that the field has become increasingly interdisciplinary, linking economics with environmental and social dimensions. This trend reflects a growing academic focus on how global

value chains can contribute not only to economic performance but also to broader sustainability and development goals.

### 3.2 Co-Authorship Analysis

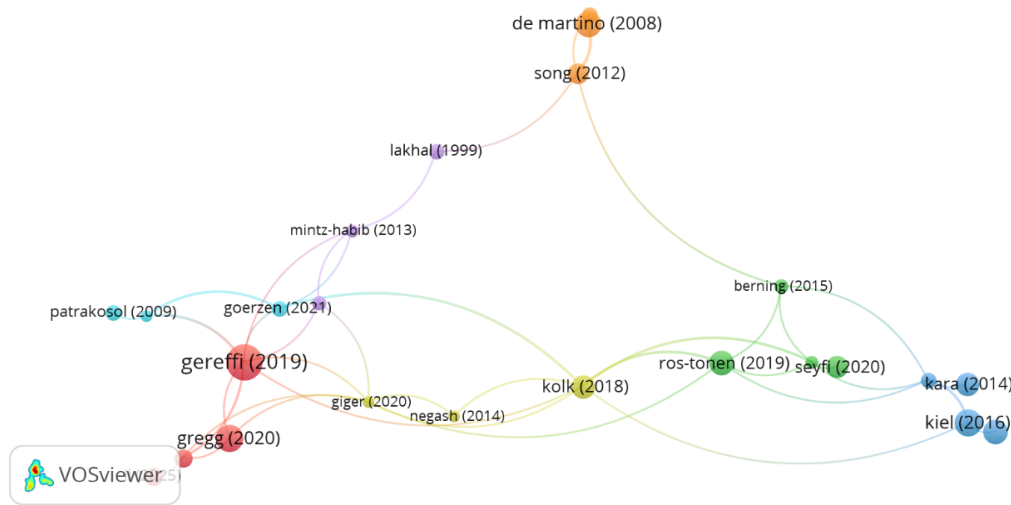


Figure 2. Co-Authorship Analysis

The interpretation of Figure 2. Co-Authorship Analysis reveals that the research network in global value chains is characterized by several interconnected clusters of authors, indicating active collaboration patterns across different research groups. Central figures such as Gary Gereffi and J.S. Gregg appear as key nodes, highlighting their influential roles and strong collaborative links within the network. The presence of bridging authors—such as Kolk and Ros-Tonen—suggests that some researchers act as connectors

between different clusters, facilitating knowledge exchange across subfields. Additionally, the spread of publication years (from earlier works to more recent ones) indicates that collaboration has evolved over time, with newer authors linking to established scholars. Overall, this pattern reflects a moderately dense but still segmented collaboration structure, where influential authors play a critical role in shaping and connecting the research landscape.

### 3.3 Citation and Co-Citation Analysis

Table 1. Most Cited Article

Citations	Author and Year	Title	Publication
1098	[16]	A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda	NJAS - Wageningen Journal of Life Sciences
160	[17]	The role of input-output analysis for the screening of corporate carbon footprints	Economic Systems Research
152	[18]	Global value chains and international development policy: Bringing firms, networks and policy-engaged scholarship back in	Journal of International Business Policy
121	[19]	Fast, global, and entrepreneurial: supply chain management, Hong	Harvard business review

Citations	Author and Year	Title	Publication
		Kong style. An interview with Victor Fung. Interview by Joan Magretta.	
106	[20]	A way forward on adaptation to climate change in Colombian agriculture: Perspectives towards 2050	Climatic Change
93	[21]	Biomass to Biofuels: Strategies for Global Industries	Biomass to Biofuels: Strategies for Global Industries
90	[22]	The impact of the industrial internet of things on established business models	IAMOT 2016 - 25th International Association for Management of Technology Conference, Proceedings: Technology - Future Thinking
88	[23]	Valorization of bio-residuals in the food and forestry sectors in support of a circular bioeconomy: A review	Journal of Cleaner Production
78	[24]	Activities, resources and inter-organizational relationships: Key factors in port competitiveness	Maritime Policy and Management
72	[25]	The impact of social media to value added in knowledge-based industries	Kybernetes

Source: Scopus, 2026

The discussion of Table 1. Most Cited Articles indicates that highly cited studies in the global value chains literature are dominated by themes integrating technology, sustainability, and global economic systems. The most influential work by L. Klerkx, E. Jakku, and P. Labarthe highlights the growing importance of digital agriculture and smart farming, reflecting a shift toward technology-driven value chains. At the same time, foundational contributions from Gary Gereffi emphasize the role of governance, firms, and policy in shaping GVC structures. Other highly cited

works, such as those by Y.A. Huang and M. Lenzen, reinforce the increasing relevance of environmental sustainability, particularly carbon footprint analysis. Additionally, topics like circular bioeconomy, Industry 4.0, and social media impacts suggest that GVC research is becoming more interdisciplinary and responsive to contemporary global challenges. Overall, the citation pattern demonstrates that impactful research tends to bridge economic performance with technological innovation and sustainability concerns.

### 3.4 Keyword Co-Occurrence Analysis

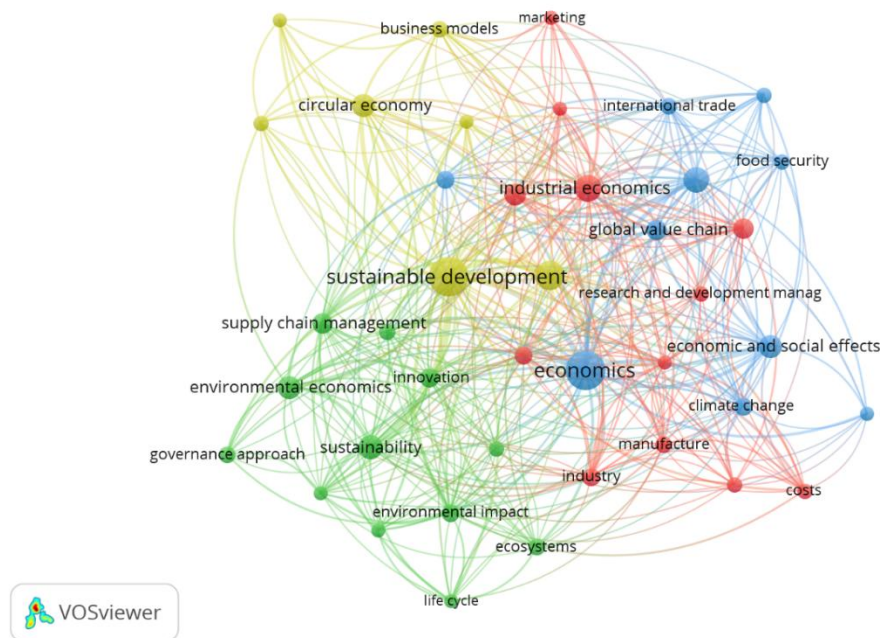


Figure 3. Co-Occurrence

The discussion of Figure 3. Co-Occurrence shows that the research landscape of global value chains is structured into several interconnected thematic clusters, reflecting the multidimensional nature of the field. The central position of keywords such as economics, sustainable development, and industrial economics indicates that these concepts act as the core foundations linking various research streams. One cluster highlights sustainability-related themes, including environmental economics, sustainability, life cycle, and environmental impact, suggesting a strong and growing focus on environmental considerations within global value chains. Another cluster emphasizes industrial and economic aspects, such as manufacture, costs, and industry, which represent the traditional focus on efficiency and production systems.

In addition, the presence of clusters related to international trade, food security, and economic and social effects demonstrates the broader socio-economic implications of global value chains. Emerging themes such as circular economy, innovation, and business

models further indicate a shift toward more adaptive and future-oriented research directions. The dense connections between clusters suggest that these themes are not studied in isolation but are increasingly integrated, reflecting a holistic approach in recent literature. Overall, the co-occurrence network reveals that research in this field is evolving toward a more interdisciplinary framework that combines economic performance, sustainability, and innovation.

### 3.5 Discussion

The results of the bibliometric analysis reveal that research on global value chains (GVC) has evolved significantly, both in terms of thematic focus and scholarly collaboration. The increasing publication trend indicates that GVC has become a central topic in development and business economics, driven by the growing complexity of global production networks and the need to understand value distribution across countries and industries. This growth is not only quantitative but also qualitative, as newer studies incorporate broader perspectives such as sustainability, digital transformation, and socio-

economic impacts [26], [27]. As a result, GVC research is no longer confined to traditional trade and production analysis but has expanded into a more integrated and multidisciplinary field.

One of the key findings from the citation analysis is the dominance of highly influential works that bridge technology, sustainability, and economic systems. Highly cited articles highlight the importance of digital agriculture, carbon footprint analysis, and global policy frameworks, indicating that impactful research tends to address real-world challenges and emerging global issues. Foundational contributions in GVC governance continue to shape the field, while newer studies introduce innovative perspectives such as Industry 4.0 and circular economy [6], [28]. This suggests that the intellectual structure of the field is built upon a combination of established theories and evolving contemporary issues, creating a dynamic research environment.

Furthermore, the co-authorship analysis demonstrates that collaboration among researchers plays a crucial role in advancing the field. The presence of key authors acting as central nodes indicates that knowledge production is influenced by leading scholars who connect different research clusters. At the same time, the existence of several distinct but interconnected clusters suggests that while collaboration is active, the field still exhibits some degree of fragmentation. Bridging authors help integrate these clusters, enabling the exchange of ideas across disciplines and contributing to the development of a more cohesive research landscape.

Finally, the co-occurrence analysis provides deeper insight into the thematic structure of GVC research. The

strong connections between keywords such as sustainable development, economics, and innovation indicate that recent studies increasingly adopt a holistic approach. The integration of environmental, technological, and economic themes reflects a shift toward sustainability-oriented and future-driven research. This evolution suggests that GVC is being redefined not only as an economic mechanism but also as a platform for addressing global challenges, including climate change, resource efficiency, and social development. Overall, the findings confirm that the field is moving toward greater interdisciplinarity, emphasizing the need for collaborative and integrative research approaches in the future.

#### 4. CONCLUSION

This study concludes that research on global value chains has experienced significant growth and transformation over time, both in terms of volume and thematic diversity. The findings indicate that the field has shifted from a traditional focus on production efficiency and international trade toward a more integrated approach that includes sustainability, digitalization, and socio-economic impacts. Influential studies demonstrate that the future of GVC research lies in addressing global challenges through interdisciplinary perspectives. In addition, collaboration among researchers plays an important role in shaping the development of the field, although further integration across research clusters is still needed. Overall, this study highlights that global value chains are not only an economic framework but also a strategic platform for achieving sustainable and inclusive development, suggesting the need for continued research that bridges theory, policy, and practice.

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