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A Systematic Review of The Use of Inter-Country Input-Output (ICIO) Table in Agri-Food Global Value Chain Analysis

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The Inter-Country Input-Output (ICIO) table serves as the primary tool and database for Global Value Chain (GVC) analysis. It enables the description and analysis of the connection between production and consumption activities in international trade, while also providing comprehensive information for economic and environmental analysis. A more in-depth systematic literature review examining the use of ICIO tables in GVC analysis on agriculture and foods sector has never been conducted. Hence, the objective of this study is to do a comprehensive examination of existing literature to get insights into the progress of research on GVC analysis utilizing the Input-Output (ICIO) table throughout the past decade. We performed a comprehensive examination of existing literature to consolidate the research themes related to the utilization of ICIO tables in GVC analysis and to comprehend how they are applied to satisfy the research goals. The research findings indicate that the ICIO table is extensively employed in GVC analysis for cross-border international commerce, sector and industry analysis, as well as GVC impact and modelling. WIOD is the most-used database in GVC analysis as it has the most industries, followed by EROA as database that covers the most countries.

1. Introduction

The Global Value Chain (GVC) has been a notable global phenomenon since the 1980s, a time when export values no longer accurately reflected a country's true economic benefits (Ahmad et al., 2018). The measurement of GVCs through the input-output table approach has rapidly advanced, providing more precise insights into economic interdependencies and trade benefits. Globalization and the configuration of production processes within GVCs have become critical in explaining recent trends in environmental and economic indicators (Espinosa-Gracia et al., 2023).

The development and use of Inter-Country Input-Output (ICIO) tables have made it possible to construct quantitative indices that assess various factors' impacts on GVCs (Xing & Han, 2022). Despite numerous contributions to the value chain concept over the years, there is still a lack of systematic reviews focusing on its evolution, particularly concerning the use of ICIO tables as the main database for such analyses (Ricciotti, 2020).

This study aims to address this gap by conducting a comprehensive review of existing literature on GVC analysis utilizing ICIO tables over the past decade. Our objective is to gain insights into the progress of research in this area and consolidate the themes related to the use of ICIO tables in GVC analysis. By doing so, we aim to better understand how these tables are used to achieve various research goals and to advance methodological approaches in GVC studies.

This study on systematic literature review will thoroughly evaluate how ICIO tables have been used in GVC analysis, providing a detailed understanding of their application and the evolution of research in this field. This review is crucial for identifying gaps in the current literature and guiding future research directions in GVC studies.

2. Method

To address the research objective, we used a systematic literature review methodology (Petticrew & Roberts, 2006). The primary objective is to critically assess every relevant article on the designated research topic (Oxley, 2019; Webster & Watson, 2002). The ICIO table is utilized in various ways in global value chain analysis. Conducting a thorough literature evaluation allows for the identification of these variations and their respective additions to the current body of work. (Lacerda & von Wangenheim, 2018) suggest that this approach allows for the identification of deficiencies in existing research and new areas for further investigation. To mitigate any biases in the study, the approach utilizes a systematic, replicable, and transparent process for reviewing and integrating the literature (Petticrew & Roberts, 2006; Rousseau et al., 2008; Tranfield et al., 2003).

As a result, readers are more confident about the present state of knowledge about the specified research questions (Rousseau et al., 2008). In a series of rigorous, methodical steps, all relevant literature within the designated theme was located, assessed, and synthesized (Boell & Cecez-Kecmanovic, 2015; Grant & Booth, 2009; Petticrew & Roberts, 2006; Rousseau et al., 2008; Tranfield et al., 2003). The five main steps of the systematic literature review procedure used in this study are as follows: (1) defining the research problem; (2) searching the literature; (3) assessing pertinent material; (4) analyzing, synthesizing, and interpreting data; and (5) summarizing the review results. The ensuing subsections provide a detailed description of the first four steps.

Defining the research problem

In the introduction, we provided a concise overview of the utilization of ICIO tables in global value chain analysis. A comprehensive review that examines the significance of ICIO tables in comprehending global value chain analysis is necessary. This review should dive into the reasons and methods behind the use of ICIO tables in agricultural sectors and explore their contribution to the existing knowledge on global value chains. Such a review would offer valuable insights for future research.

Performing a literature search

The literature search began by identifying the bibliographic databases, descriptors or keywords, and the search method. Our selection of significant databases included Scopus, Semantic Scholar, Science Direct, and Google Scholar. Our concentration was on areas of research related to agriculture or agri-food. The search criteria encompassed works that were published in peer-reviewed publications. Peer-reviewed publications play a crucial role in ensuring the high quality of the literature in the sample (Denyer & Tranfield, 2009).

The initial literature search was conducted using keywords that were specifically connected to two concept clusters: (1) ICIO tables and (2) global value chains. During the initial search, we employed a combination of all the pertinent ideas from two separate concept clusters ("ICIO table" and "global value chains") utilizing the "AND" separator. Our technique was implemented to guarantee that no pertinent literature was excluded from our study.

In the following search, we utilized the inclusion criteria "agri*" and "*food" with the separator "OR". The purpose of this method was to guarantee that all relevant agricultural phrases are included in the chosen literature.

The search procedure was further improved by utilizing precise strings supplied by the separate databases to verify the presence of the requested keywords in either the title, abstracts, or the authors' keywords. The strings used in the separate databases are provided as samples in Table 1. The literature search was restricted to publications from January 2010 to December 2023.

Table 1. Search phrases used in literary searches.

Scientific database	**Examples of search strings**
Google Scholar	("global value chain" OR "GVC") AND (input output AND ICIO) AND (agri** OR **food)
Scopus	TITLE-ABS-KEY ("global value chain" OR "gvc" AND icio OR "input output table") AND PUBYEAR > 2010 AND PUBYEAR < 2024
Science Direct	("global value chain" OR GVC) AND (input output OR ICIO)
Semantic Scholar	"global value chain", GVC, ICIO, agri, food

Assessing the relevant literature

During the last stage, the search results from various literature sources were gathered and any duplicate papers were removed. The criteria for inclusion and exclusion were formulated according to the study's purpose of examining the use of ICIO table into value chain analysis within the agricultural industry.

The abstracts of the chosen documents were examined to confirm that their discussions centered on global value chain analysis using ICIO tables. Following an eligibility assessment based on the examination of the abstracts, a total of 62 research papers were chosen for the final evaluation as shown in Figure 2.

Synthesis, analysis, and interpretation of data

There were two sections to the information analysis of the chosen documents. Identification of data, including authorship, publication year, type of sector or industry, particular issues,

and nation, was the initial step in the analysis. The synthesis is divided into three categories by the classification process: (1) topic of the research; (2) research objective; and (3) operationalization. The analytical elements were inferred from the chosen papers and the use of ICIO table and value chain (Kaplinsky & Morris, 2002) literature.

Analyzing descriptively

Figure. 1 shows an overview of the distribution of the chosen documents by year of publication, research location by country, and sector or industry type examined. Among the chosen documents, between 2018 and 2021, over 65% of the documents were published. The same group of writers wrote about 36% of the texts. Of the sixty-two materials that were examined, 63% were peer-reviewed articles from Scopus and Direct Science database, 24% articles from Semantic Scholar and rest 13% coming from Google Scholar.

Figure 1. Distribution of the selected documents by year, scientific database and first author country origin (n = 62)

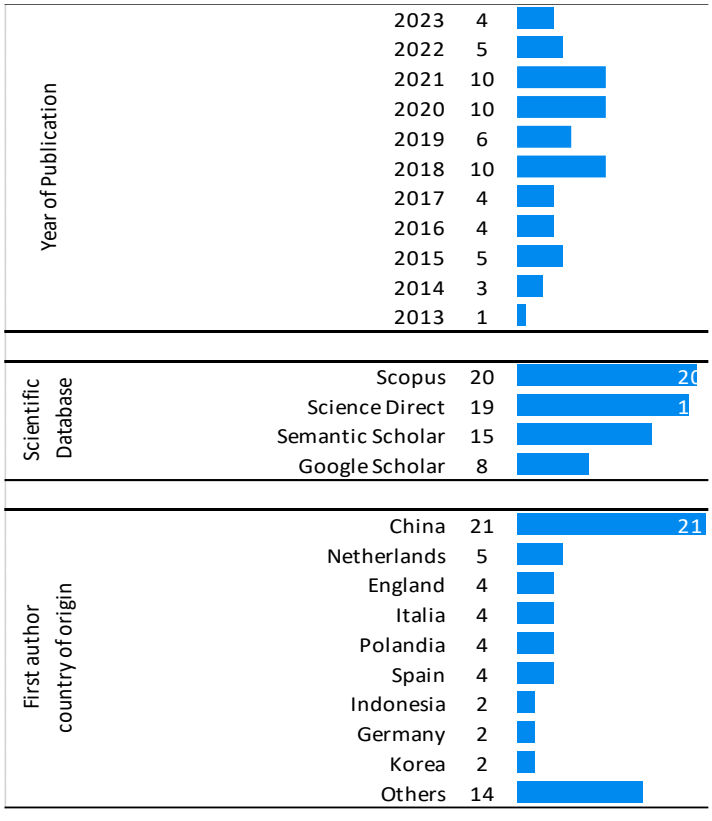
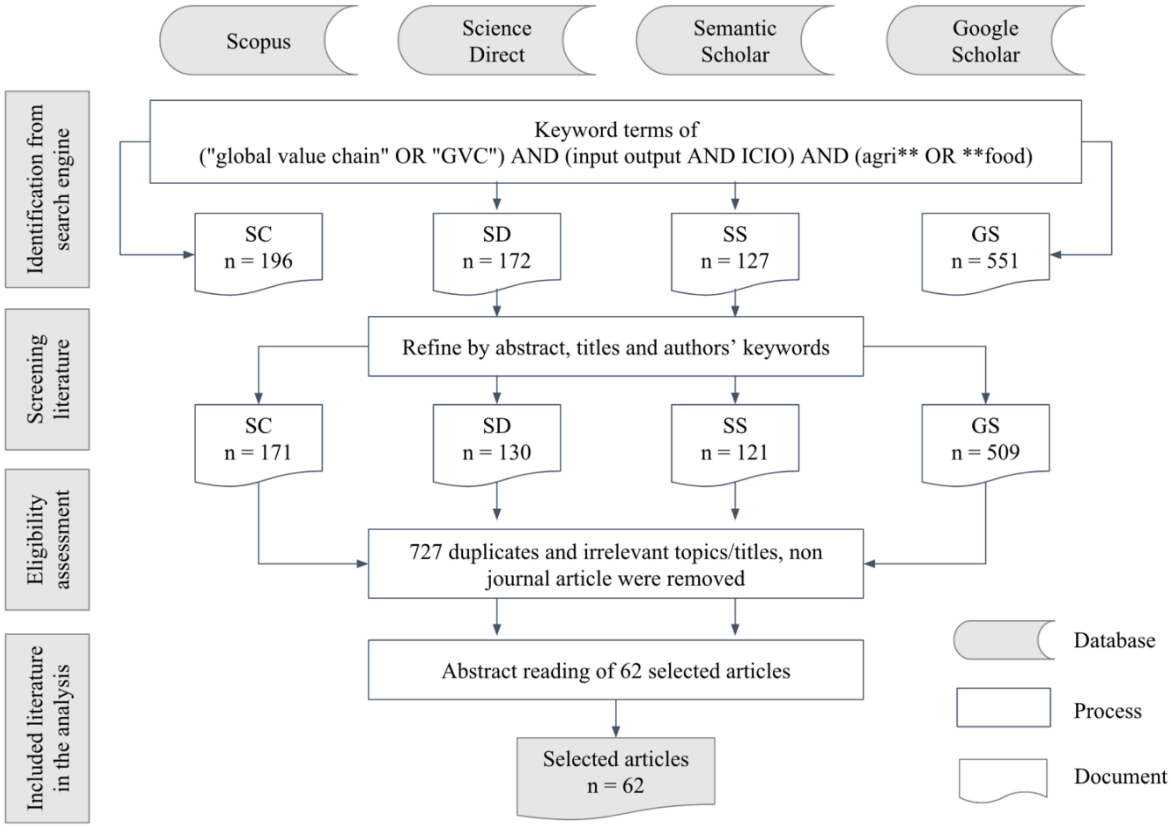


Figure. 2. Literature search process and results.



3. Result and Discussion

By using the keywords "Global Value Chain" and "Inter Country Input Output (ICIO) Table", the author obtained 889 articles from four databases, namely Scopus, Science Direct, Google Scholar and Semantic Scholar. Then, from a total of 1.046 articles, the author checked for duplication, resulting in 931 remaining articles. The 931 articles were further filtered into 204 articles by looking at the completeness of data such as author's name, year of publication, research title, journal name, keywords and abstract. After that, it is selected based on keywords. The keywords that must be in the article keywords are "GVC" and "ICIO". From the keyword selection, 62 articles were obtained which were then ready for bibliometric analysis. The 62 articles consist of four databases, namely Scopus, Science Direct, Google Scholar and Semantic Scholar. The frequency and bar chart as shown in Figure 1.

It is known that there are 8 published articles originating from the Google Scholar database. Not much different from Google Scholar, there are 15 articles from Semantic Scholar. Then from the Science Direct database there are 19 articles. And the most, namely 20 articles, came from the Scopus database.

Distribution based on author country of origin

The author selects research trends by author country of origin which publishing articles in the 2010-2023 period. Based on the mapping in Figure 2, it can be seen that research on the topics of GVC and ICIO published during the 2010-2023 period was mostly written by authors from China, namely 21 articles. This shows that China's trade is very advanced and has become a role model for the trade industries of other countries. The second position is occupied by the Netherlands where there are 5 articles written by Dutch authors. Then there were 4 articles each written by authors from England, Italy, Poland and Spain. Writers from Indonesia, Germany and Korea. There are the rest 14 countries contributed to the selected articles and grouped in as Others in Figure 2.

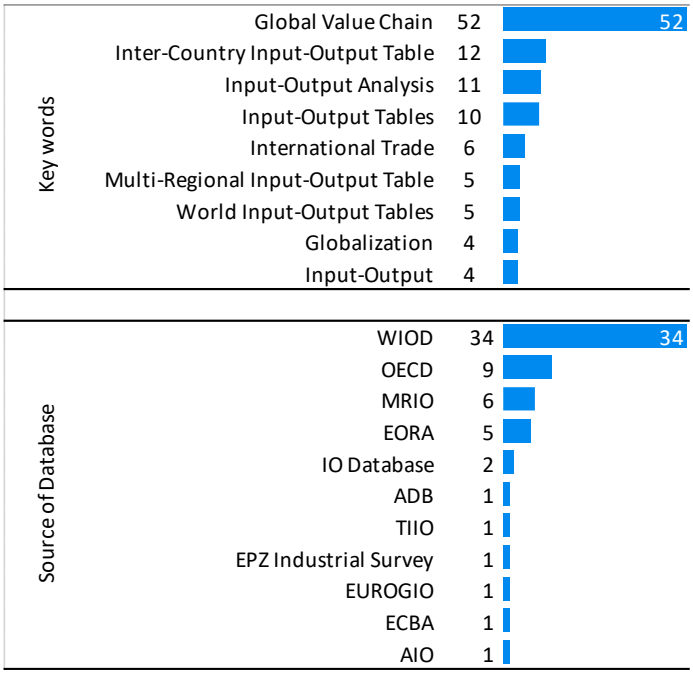
The researcher with the highest number of publications is Lizhi Xing who studied the Global Value Chain (GVC) network under an Econophysics perspective in 2009. He adopted Inter-Country Input-Output (ICIO) data to build a complex network model that is weighted and directional, which is the basis for measuring, simulating and predicting international trade.

Apart from Xing Lizhi, there are 2 figures who also introduced the GVC concept, namely Zhi Wang and Gary Gereffi. It's just that not much of their research uses the keywords GVC and ICIO. Zhi Wang is a research professor at George Mason University, as well as a professor and founding director of the Global Value Chain Research Center at the University of International Business and Economics (UIBE) in Beijing. His research interest is international trade, where he has made significant contributions in the field of global value chain measurement and analysis. Meanwhile, Gary Gereffi is a Professor Emeritus of Sociology and Director of the Center for Global Value Chains at Duke University. He has written over a dozen books and several papers on globalization, industrial upgrading, and social and economic growth, and he is one of the creators of the GVC framework.

The most used ICIO database

Next research trends are classified based on the data sources used in published articles. Figure 3. shows that the most articles found using the World Input-Output Database (WIOD) were 34 articles. The WIOD is the first public database that contains new information about these trends and provides an opportunity to analyze world input-output. This database is the most widely used because most research analyzes global value chains with input output analysis in various parts of the world. The WIOD provides a time series of world input-output tables for forty countries worldwide and a model for the entire world.

Figure 3. Distribution of the selected documents by keyword and source of database (n = 62)



Second place is the OECD (Organization for Economic Co-operation and Development) database. The OECD serves as a one-of-a-kind forum and information centre for data and analysis, experience exchange, best practice sharing, and advice on public policy and international standard development. The OECD database provides a collection of economic and social information for all OECD countries as well as selected non-member countries.

The next top used database is EORA which consists of a multi-region input-output table (MRIO) model that provides high-resolution time series of IO tables with appropriate environmental and social satellite accounts for 190 countries. EROA is the database that covers the most countries (189 countries), while WIOD includes the database with the most industries (56 industries).

The data from 2013 to 2023 on the number of citations for various articles related to global value chains (GVCs). In 2013, article from (Tukker & Dietzenbacher, 2013) on global multiregional input-output frameworks had a notably high impact, with 356 citations, indicating it addressed a crucial and foundational aspect of GVCs. Similarly, (Meng et al., 2018) article on tracing CO2 emissions in global value chains garnered 197 citations, reflecting the growing interest and importance of environmental sustainability within the context of global trade networks.

Figure 4. Number of article citations by timeline

Year	Number of Citations	Authors	Article Title
2011	63	Romero, I. et al	A multi-level approach to the study of production chains in the tourism sector
2013	356	Tukker, A. et al	Global multiregional input–output frameworks: an introduction and outlook
2014	47	Barrientos, S.	Gender and Global Value Chains: Challenges of Economic and Social …
	5	Ye, M., et al	The Global Value Chains in BRICS Countries
	1	Muradov, K.	Accounting of value added in international trade
2015	60	Los, B., et al	How important are exports for job growth in China? A demand side analysis
	17	Lu, Y.	China's electrical equipment manufacturing in the global value chain: A GVC …
	9	Timmer, M. P., et al	An Illustrated User Guide to the World Input-Output Database: the Case of …
	8	Nurdiati, R. P., et al	Peran Indonesia danam Rantai Nilai Global Produk Elektronik
	7	Zhu, Z., et al	The similarity of global value chains: A network-based measure
2016	45	Mair, S., et al	Global inequities and emissions in Western European textiles and clothing …
	27	Grodzicki, M. J., et al	New Dimensions of Core-Periphery Relations in an Economically Integrated …
	2	Puttanapong, N.	Tracing Thailand's linkages to global supply chain: Applications of WIOD …
	0	Lin, H., et al	A value-added analysis of trade in Taiwan and Korea's ICT industries
2017	152	Acquaye, A., et al	Measuring the environmental sustainability performance of global supply chains …
	39	Kaltenegger, O., et al	The effect of globalisation on energy footprints: Disentangling the links of …
	17	Meng, B., et al	Compilation of a regionally extended inter-country input–output table and its …
	11	Muradov, K.	Trade costs and borders in global value chains
2018	197	Meng, B., et al	Tracing CO2 emissions in global value chains
	166	Owen, A., et al	Identifying critical supply chains and final products: An input-output approach …
	50	Prete, D. Del, et al	Global value chains: New evidence for North Africa
	26	Amador, J., et al	Who's Who in Global Value Chains? A Weighted Network Approach
	25	Duarte, R., et al	From convergence to divergence? Some new insights into the evolution of the EU
	15	Wen, D.	Domestic Value Added in China's Exports to the World and Its Partners
	11	Ahmad, T., et al	Global Value Chain of Indonesian Pulp and Paper Industry
	9	Xing, L., et al	Measuring the impact of final demand on global production system based on …
	9	Gurgul, H., et al	On using dynamic IO models with layers of techniques to measure value added …
	7	Xing, L., et al	Understanding the competitive advantage of TPP-related nations from an …
2019	39	Tian, K., et al	Measuring industrial upgrading: applying factor analysis in a global value …
	21	Xing, L., et al	Betweenness centrality for similarity-weight network and its application to …
	20	Vries, G. De, et al	Do Asian Countries Upgrade in Global Value Chains? A Novel Approach …
	9	Banacloche, S., et al	Implications of measuring value added in exports with a regional input-output …
	5	Daaniyall, M., et al	Skills and ethnics wage inequalities within the global value chain: an …
	0	García-ramos, M., et al	A linkage analysis of the global value network
2020	29	Eppinger, P., et al	Covid-19 Shocking Global Value Chains
	22	Prades-illanes, E., et al	Spanish Regions In Global Value Chains: How Important? How Different?
	17	Fortanier, F., et al	Accounting for firm heterogeneity in global value chains
	17	Grodzicki, M. J., et al	Cost-competitiveness and structural change in value chains vertically-integrated …
	15	Guan, J., et al	Closeness centrality for similarity-weight network and its application to …
	10	Giammetti, R.	Tariffs , domestic import substitution and trade diversion in input-output …
	5	Ito, K., et al	Japan's participation in global value chains: splitting the IO table into …
	5	Jin, T., et al	Sectoral decomposition of korea's energy consumption by global value …
	5	Xing, L., et al	Simulation analysis of the competitive status between China and …
	0	Miroudot, S.	The Reorganization of Global Value Chains in East Asia before and after …
2021	43	Liu, C., et al	Can global value chain participation affect embodied carbon emission intensity?
	13	Pleticha, P.	Who Benefits from Global Value Chain Participation? Does Functional …
	6	Xie, R., et al	Are global value chains merely global? The case of Chinese Provinces …
	5	Felice, G., et al	Trade balances and global value chains: Is there a link?
	3	Xing, L., et al	Network-based driving force of national economic development: a social …
	3	Huang, M., et al	Research on the measurement and influencing factors of implicit water …
	2	Xing, L., et al	Parameterless Pruning Algorithms for Similarity-Weight Network and …
	2	Kersan-škabi, I., et al	The characteristics of regional value chains in the sector of chemicals …
	0	Su, H., et al	The Impact of the Outward and Inward FDI on Global Value Chains
2022	11	Szymczak, S., et al	Global value chains and labour markets – simultaneous analysis of wages …
	5	Hossain, S., et al	Global value chain: An empirical investigation of Bangladesh's garments …
	5	Wang, D., et al	Simulation of Cooperation Scenarios of BRI-Related Countries Based on …
	4	Chen, W., et al	Measuring the Intermediate Goods' External Dependency on the Global …
	0	Qin, M., et al	The Global Value Chain and Welfare Effects of Tariffs—Counterfactual …
2023	5	Espinosa-Gracia, A., et al	CO2 emissions and global value chains indicators …
	4	Bai, S., et al	Comprehensive assessment of the environmental and employment impacts …
	1	Wu, W., et al	How processing trade assists local industrial upgrading: input–output …
	0	González, G. H., et al	Global Production Networks in the Regional Analysis Framework : …

The most-cited articles

Overall, the distribution of citations reveals that certain years and topics attracted more attention than others. For instance, 2017 and 2018 saw several highly cited articles, such as work (Acquaye et al., 2017) on the environmental sustainability performance of GVCs (152 citations) and (Owen et al., 2018) study on critical supply chains (166 citations). This suggests that during these years, there was a heightened focus on understanding and measuring the environmental and economic impacts of GVCs.

Circles network visualization based on keywords

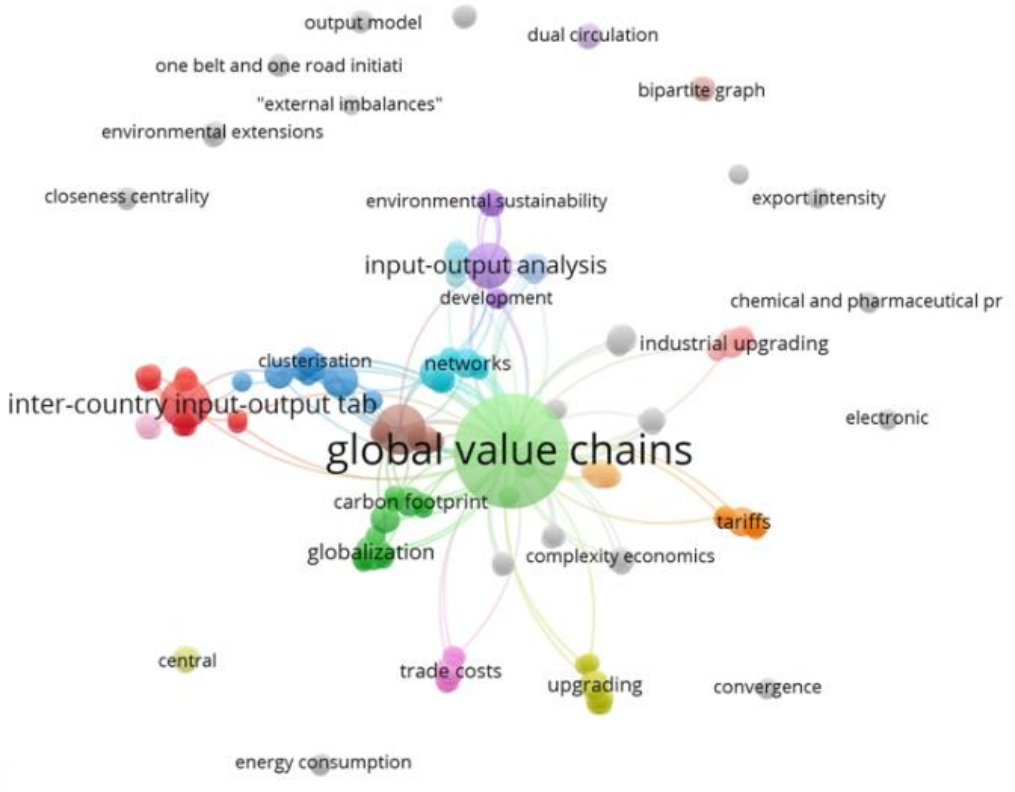
The author carries out an analysis related to items that often appear in research developments on the themes "GVC" and "ICIO". After the RIS (research information system) data was entered into the VOSviewer software, 174 terms were obtained. Then the following results were obtained, of which there are 36 clusters consisting of 174 theme items in keywords that often appear in published articles.

The main cluster consists of 13 items, namely: backbone extraction, collaborative opportunity index, collaborative threat index, counting first passage betweenness, econophysics, global production system, global value chain network, ICT, initiative, inter-country input-output table, Markov process, the belt and road, TIVA as shown in Figure 4.

The second cluster consists of 12 items, namely: carbon footprint, carbon intensity, CO2 emissions, embodied emissions, globalization, Malaysia, multinational enterprises (MNEs), skilled unskilled wage inequality, social footprint, structural breaks, textiles & clothing, and trade in value-added. While third cluster consists of 11 items, namely: automotive manufacturing, betweenness centrality, clusterisation, domestic value-added, EU periphery, global production networks, input-output tables, network analysis pivotability, slow balance, total factor productivity.

The fourth cluster consists of 8 items, namely: agri-food, gender, governance, hotels, SMEs, tour operators, travel agencies, upgrading. The next cluster consists of 8 items, namely: development, environmental sustainability, industry-level, input-output analysis, performance measurement, supply chain, technology diffusion, value chain.

Figure 5. Circles Network Visualization based on Keywords
Source: Processed data (2023)



There are 3 clusters of each consists of 7 items, namely APLS model, BRICS countries, input-output structure, networks, node similarity, and vertical specialization. Followed by Brexit, general equilibrium model, import substitution, production networks, tariffs, trade barriers, world input–output table. And last cluster is Bangladesh, carbon emissions, employment, garments, international trade, international trade, carbon emissions, employment, and wages.

Cluster consists with 6 items are 3 groups, namely: border crossings, cumulative tariffs, fragmentation of production, import intensity, input-output, and trade costs. And then, factor analysis, global segmentation, industrial linkage, industrial upgrading, trade processing, and spillover effects. Last one is endogenous dynamics, global value chains, gross exports accounting, inter-country input-output (ICIO) tables, international production networks, and north Africa. The rest clusters consist of less than 5 items.

Key research topics of the selected documents

Among the 62 publications on GVC and ICIO, the authors performed analysis specifically focused on research topics in these articles. Table 2 shows that the use of ICIO table in GVC analysis are

dominantly used in the topic of cross-border international trade and GVC analysis by sector on industry. Each topic consists of 20 articles or 32% of the selected documents. Meanwhile, the topic on impact of GVC operation and GVC modelling account for 12 and 10 articles or equal to 19% and 16% of the selected documents.

The authors conducted a related analysis of the research objects carried out by researchers on GVC and ICIO. The results showed many articles discussing global industries or world industries about global value chains with the analysis of intercountry input-output tables. (Guan et al., 2020a, 2020b; Tian et al., 2019; Xing et al., 2020; W. Zhu, 2012, 2014). Then there's an article discussing the topic of agro-food in the global value chain. Barrientos (2014) wrote a rather interesting article, he deals with global value chains in the agri-food sector by raising gender topics.

The other six articles propose a conceptual framework for a global value chain. As done by (Xing, Guan, & Wu, 2018) who built a model of an inter-country input-output network, in his studies, there are three stages in the creation of a GVC network, namely, firstly, building a model for an inter-state input-output network to produce a topology of the structure of the global economic system. Secondly, the propagation of goods between global value chains as a Markov process.

Thirdly, analyzing the features of globalization at the global level and the country in various sectors. Not only did Xing et al (2018), other researchers such as (Meng & Yamano, 2017; Miroudot & Nordström, 2020; Tukker & Dietzenbacher, 2013; Xing & Han, 2021) also model global value chain networks.

Discussions about energy and water are also interesting topics to be discussed in the trends of the publication. As described in the article identifying critical supply chains and final products: An input-output approach to exploring the energy-water-food nexus. This UK-focused research recognizes that strategies aimed at reducing environmental impacts should not jeopardize the social and economic well-being of the UK and its trading partners. Banacloche et al. (2020) also did a similar study.

Furthermore, Espinosa-Gracia et al. (2023); Liu & Zhao, (2021); Meng et al. (2018, 2023) actively publish their articles on global value chains on global carbon emissions. There are also articles doing cross-country comparisons, such as a study conducted by García-Ramos & Fujii-Gambero (2019) that compares Britain with other key G-20 countries for three specific industries that have certain relevance from an inter-industrial perspective.

Table 2. Research topic category of the selected document

Number of Articles	Research Topic Category	Authors
20	Cross-border international trade	(Barrientos, 2014; Bolea et al., 2018; Changwatchai & Dheera-Aumpon, 2023; de Vries et al., 2019; Del Prete et al., 2018; Eppinger et al., 2021; García-Ramos & Fujii-Gambero, 2019; Giammetti, 2020; Guan et al., 2020a; Ito et al., 2020; Lin et al., 2016; Muradov, 2017; Qin et al., 2022; Tian et al., 2019; Wang et al., 2022; Wen, 2018; Xing et al., 2019, 2020; Ye & Voigt, 2014; Z. Zhu et al., 2018)
20	GVC Analysis based on Sector and Industry	(Ahmad et al., 2018; Amador et al., 2018; Banacloche et al., 2020a; Blázquez et al., 2023; Chen & Xing, 2022; Felice & Tajoli, 2021; Grodzicki & Geodecki, 2016; Grodzicki & Skrzypek, 2020; Hossain & Baars, 2022; Jin & Choi, 2020; Kersan-Škabić & Belullo, 2021; Lu, 2017; Mair et al., 2016; Nurdiati et al., 2018; Owen et al., 2018; Pleticha, 2021; Prades Illanes & Tello, 2020; Romero & Tejada, 2011; Timmer et al., 2015; Wu & Hong, 2023)
12	Analysis of GVC Impact	(Abd Rahman et al., 2022; Acquaye et al., 2017; Bai et al., 2023; Espinosa-Gracia et al., 2023; Fortanier et al., 2020; Huang et al., 2021; Kaltenegger et al., 2017; Liu & Zhao, 2021; Los et al., 2015; Meng et al., 2018; Su & Fu, 2021; Szymczak & Wolszczak-Derlacz, 2022)
10	GVC Analysis and Modelling	(Gurgul & Lach, 2018; Meng & Yamano, 2017; Miroudot & Nordström, 2020; Reich, 2018; Tukker & Dietzenbacher, 2013; Xie et al., 2021; Xing et al., 2021; Xing, Guan, & Wu, 2018; Xing, Guan, Dong, et al., 2018)

Chemical equipment, and electronics are quite interesting to discuss. like an article written by Kersan-Škabić & Belullo (2021) on the subject of chemical and pharmaceutical production in the United Emirates. While (Nurdiati et al., 2018) an Indonesian writer raised the global discussion of the value chain of the electronics industry in Indonesia. (Hauge, 2020) also researched the information and communication technology (ICT) industry acquired by Taiwan and Korea. Furthermore, the automotive industry also became an interesting topic that was discussed in 3 publication articles, such as the articles written by (González et al., 2023; Grodzicki & Skrzypek, 2020; Timmer et al., 2015).

Accounting research is also an interesting topic to discuss. This is because a value chain must require accounting calculations. (Fortanier et al., 2020) also conducted a study on accounting for firm heterogeneity in global value chains that compared multinationals and domestic companies from its accounting side. There are also discussions about bilateral gross export accounting, which was conducted by (Muradov, 2017).

Then discussions about global value chains in the fields of automotive, chemistry, tourism, peripheral industries to the electronics industry are also often raised in the topic of discussions of articles. Topics about the tourism industry are also often written in an article on the global value chain as written by Romero & Tejada, (2011). The research proposes a multi-level approach to analyzing the production chain of two tourism activities: the hotel industry and the travel agency. It uses macro and micro-economic approaches by identifying the most significant tourism production chains.

Later (Hossain & Baars, 2022; Mair et al., 2016) in his research instead raised the topic of the textile industry from the GVC perspective. Mair et al. (2016) applied the global sub-system of the multi-regional input output accounting framework to test the sustainability implications of Western European textile and clothing demand between 1995 and 2009. The results show that Western European textile and clothing consumption remains dependent on cheap labour from Brazil, Russia, India and China (BRIC), mainly in Textiles, Clothing and Agriculture.

4. Conclusion

In summary, the utilization of Inter-Country Input-Output (ICIO) tables in Global Value Chain (GVC) analysis has proven to be an invaluable methodological advancement, offering a detailed and comprehensive understanding of the complex interdependencies that characterize cross-border international trade, GVC analysis based on industrial sector, GVC impact and modelling.

ICIO tables enable researchers and policymakers to dissect the intricate layers of value creation across different industries and countries, providing insights into how intermediate goods and services traverse borders before culminating in final products. WIOD is the most-used database in GVC analysis as it has the most industries (56 sectors), while EROA is the database that covers the most countries (189 countries).

Additionally, the implementation of ICIO tables is not limited to economic analysis; it also encompasses the environmental and social aspects of GVCs. Researchers can assess the ethical and sustainability implications of global production networks by integrating data on labour conditions, resource use, and carbon emissions. This comprehensive approach emphasizes the significance of ICIO tables as a tool for fostering responsible trade practices and sustainable development. The significance of ICIO tables in guiding business strategies, informing policy decisions, and advancing academic research will only increase as global trade continues to evolve, solidifying their status as a cornerstone of GVC analysis.

5. References

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