

## Trade Facilitation and the Trade Facilitation Agreement: Bibliometric Analysis and Contribution to UN Goal 8

**Rachid ALILOUCHE, (PhD Student)**

*LISAD Laboratory  
National School of Applied Sciences,  
Ibn Zohr University of Agadir, Morocco*

**Jamal AGOURAM, (Full professor)**

*LISAD Laboratory (ENSA)  
Polydisciplinary Faculty of Taroudant  
Ibn Zohr University of Agadir, Morocco*

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| <b>Correspondence address :</b> | National School of Applied Sciences of Agadir, Ibn Zohr University, Morocco<br>0659266689                                                                                                                                                                                                                                                                    |
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## Trade Facilitation and the Trade Facilitation Agreement: Bibliometric Analysis and Contribution to UN Goal 8

### Résumé :

L'article examine comment l'Accord sur la facilitation des échanges (AFE) influence le commerce international en lien avec l'Objectif de développement durable 8 (ODD 8) des Nations Unies. À cette fin, une étude bibliométrique a été menée à partir de la base de données Web of Science sur la période 2000-2024. Tout d'abord, les études se sont concentrées sur la facilitation des échanges en général et, plus particulièrement, sur les effets de l'AFE après l'entrée en vigueur de l'accord en 2017.

D'après les résultats, le nombre de publications et de citations sur ce thème a augmenté, et le pic le plus élevé a été observé en 2020, lorsque l'AFE a été activé. L'outil VOSviewer a permis d'approfondir l'analyse en étudiant la cooccurrence des mots clés et les réseaux de citations. L'analyse met en évidence trois thèmes de recherche dominants : la réduction des coûts du commerce, la diversification des exportations et le renforcement des infrastructures logistiques et liées au commerce.

De plus, une section spécifique est consacrée à l'étude de 11 articles traitant explicitement l'AFE, parmi les 123 articles analysés. Ces derniers sont directement liés à plusieurs cibles de l'ODD 8, notamment la croissance économique (8.1), la diversification des exportations (8.2), le soutien aux PME (8.3) et l'aide pour le commerce en faveur des PMA (8.a).

L'étude mentionne que les collaborations internationales entre pays et auteurs jouent un rôle important dans la diffusion des connaissances. Dans l'ensemble, cette étude clarifie les dynamiques de recherche sur l'AFE et l'ODD 8, met en évidence des domaines encore peu explorés dans la littérature et suggère des implications pertinentes pour les politiques de facilitation des échanges dans les pays en développement.

**Mots clés:** trade facilitation; trade facilitation agreement; Sustainable Development Goal 8 (SDG 8)

**JEL Classification :** F14, F15

**Type du papier :** Recherche Théorique

### Abstract:

The paper examines how Trade Facilitation Agreement (TFA) influences international trade in connection with the UN Sustainable Development Goal 8 (SDG 8). To this end, a bibliometric study was conducted based on the Web of Science database, the period of 2000-2024. First, the studies have concentrated on the trade facilitation in general and the effects of the AFE once the document becomes effective in 2017 in particular.

Based on the findings, the number of publications and citations on this topic have increased, and the highest number of them was noted in 2020, when TFA was activated. VOSviewer tool allowed further developing the analysis and analyzing the co-occurrence of keywords and citation networks. The analysis highlights three dominant research themes: trade, cost reduction, export diversification, and the strengthening of logistics and trade-related infrastructure.

Additionally, specific section is dedicated to the study of 11 articles that explicitly deal with TFA, out of the 123 articles that were analyzed. The latter link directly to several targets of SDG 8, including economic growth (8.1), export diversification (8.2), support for SMEs (8.3) and aid for trade for LDCs (8.a).

The study mentions that the International collaborations between countries and authors play an important role in the dissemination of knowledge. Overall, this study clarifies the dynamics of research on the TFA and SDG 8, points to underexplored areas in the literature, and suggests policy-relevant insights for trade facilitation strategies in developing economies.

**Mots clés :** trade facilitation; trade facilitation agreement; Sustainable Development Goal 8 (SDG 8)

**JEL Classification :** F13 ; F14

**Type du papier :** Recherche Théorique

## 1. Introduction :

In the context of the accelerating globalization of trade and the pursuit of inclusive development, trade facilitation has emerged as a central lever in international trade dynamics. The Trade Facilitation Agreement (TFA) is an important key factor in this dynamic; it was created in 2013 and entered into force in 2017. The objective of this is to reduce trade costs and streamline international trade by making it simple and harmonize customs procedures<sup>1</sup>. Its impact is directly related to the international development goals; in particular the UN's Sustainable Development Goal 8 (SDG 8), which promotes sustained economic growth, productive employment and decent work for all<sup>2</sup>. Although (Portugal-Perez and Wilson 2012) did not directly study the ERA, their work on logistics infrastructure and export diversification indirectly illustrate the mechanisms by which these reforms contribute to the integration of developing countries and LDCs into world trade. However, despite the growing importance of the TFA and its links to SDG 8, the existing literature remains scattered and lacks a comprehensive overview of the themes, countries, and methods covered. Few synthesis studies have mapped this research field systematically, which justifies the need for a bibliometric approach.

The growing interest in trade facilitation is reflected in scientific production, particularly visible in the Web of Science database, which serves as a reference for academic publications. Before 2012, there was little work on this topic, which highlights the marginal place it occupied in academic debates. Starting in 2013, and especially after the effective implementation of the TFA in 2017, the number of publications increased significantly, peaking in 2020 with 16 published articles, before stabilizing at around 10 articles per year between 2021 and 2023. The analysis of bibliometric networks highlights the central role of the concept of "trade facilitation", mentioned 37 times in the publications surveyed. Several structuring research areas are emerging, including the impact of trade facilitation on economic development, the application of gravity models, infrastructure costs and the influence of regional trade agreements. These thematic groups demonstrate that trade facilitation does not follow a naive regulatory framework but it is a strategic tool that the developing countries can use to lower their trade costs, expand their exports and also to increasingly become a part of the global value chain. It is also important to note that scientific partnerships are involved in the creation of research on trade facilitation.

The authors like Wilson and Shepherd are also characterized as influential and which is due to the depth of their work and the breadth of their work collaborations which add to the knowledge in this area. The bibliometric analysis emphasizes the important researchers and reference sources, hence making it easier to understand the dynamics of research. International development goals are also directly connected with trade facilitation with UN Goal 8, which strives to achieve economic growth in the long term, productive employment and decent work. The differentiation of academic contributions based on their central themes and compatibility with the goals of this purpose allows this study to offer a systematic picture of scientific production and possible changes in policies regarding the global economy.

This article aims to conduct a bibliometric analysis of the literature on trade facilitation and its links to SDG 8, in order to map the key themes, influential authors, and major methodological trends in this research field. This study is based on a methodology including the analysis of co-citation (via VOSviewer) and the exploration of bibliographic networks to identify major contributions to the scientific literature on trade facilitation. The choice of bibliometric analysis and the Web of Science database is justified by their recognized relevance for systematically

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<sup>1</sup> World Trade Organization; 2017 Annual Report

<sup>2</sup> RETURN ON THE 2020 THEME OF THE WCO SUSTAINABILITY AT THE HEART OF CUSTOMS ACTION FOR PEOPLE, THE PROSPERITY AND THE PLANET January 2021

mapping a scientific field, identifying dominant themes, and tracing the intellectual structure of a body of literature. The results highlight influential authors and documents such as (J. Wilson, Mann, and Otsuki 2003b). Establishing an explicit relationship between the TFA and specific targets of SDG 8.

The remainder of this article is structured as follows. The first section presents the conceptual framework on trade facilitation and the TFA. The second section describes the bibliometric methodology adopted. The third section presents the results and analyses of the bibliometric networks. The fourth and final section discusses the implications of the findings in relation to SDG 8 and offers concluding remarks.

## **2. Theoretical and Conceptual Background**

Trade facilitation may seem at first glance like a technical and administrative matter a question of customs forms and border procedures. But behind these apparently dry mechanisms lies a much broader ambition: to reshape the way countries, especially developing ones, connect to the global economy. Before presenting our methodology, we therefore take a step back to build the conceptual framework that underpins this study. We explore what trade facilitation really means, how the TFA translates this ambition into concrete commitments, and why SDG 8 provides such a relevant lens through which to assess its impact. We also take stock of what researchers have already found and what remains surprisingly underexplored before explaining why bibliometrics offers a powerful tool to fill this gap.

### **2.1. Trade Facilitation and the Trade Facilitation Agreement (TFA)**

Trade facilitation refers to the simplification, modernization and harmonization of export and import processes. It encompasses a broad range of measures aimed at reducing transaction costs along the trade chain, including the streamlining of customs procedures, the improvement of border management, the digitalization of trade documents, and the enhancement of transparency in regulatory frameworks. These reforms are particularly relevant for developing countries and least developed countries (LDCs), which often face disproportionately high trade costs that limit their integration into global value chains.

The TFA, concluded under the auspices of the World Trade Organization (WTO) in 2013 and entered into force in February 2017, represents the most significant multilateral trade agreement since the creation of the WTO itself. It provides a legally binding framework for custom reform and contains provisions for expediting the movement, release and clearance of goods. Its impact operates through several key channels: the reduction of border delays, the lowering of administrative burdens, the improvement of logistics performance, and the promotion of cooperation between customs authorities. For developing countries, these changes translate into tangible gains in export competitiveness, trade diversification and participation in regional and global trade networks.

### **2.2. SDG 8 and the Contribution of Trade Facilitation**

The United Nations Sustainable Development Goal 8 calls for sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all. Within this broad objective, several specific targets are directly relevant to trade facilitation. Target 8.1 focuses on sustaining per capita economic growth, while target 8.2 emphasizes achieving higher levels of economic productivity through diversification and technological upgrading. Target 8.3 promotes development-oriented policies that support productive activities and decent job creation, and target 8.a calls for increasing Aid for Trade support to developing countries, particularly LDCs.

Trade facilitation contributes to these targets through multiple pathways. By reducing trade costs, it enables firms, especially small and medium-sized enterprises to access international

markets more easily, thereby stimulating export growth and job creation. By harmonizing customs procedures, it fosters a more predictable and transparent business environment, which is conducive to foreign direct investment and technology transfer. In this sense, the TFA can be understood as an operational instrument for achieving the economic dimensions of the 2030 Agenda for Sustainable Development.

### **2.3. Empirical Literature on Trade Facilitation and the TFA**

A growing body of empirical work has examined the effects of trade facilitation reforms of trade flows, export costs and economic development. Seminal contributions such as Wilson, Mann and Otsuki (2003) demonstrated that improvements in port efficiency, customs, transparency and regulatory environments could generate significant gains in trade volumes, particularly for developing economies. Subsequent studies using gravity models confirmed that reductions in non-tariff barriers and customs delays have a positive and statistically significant impact on bilateral trade.

More recent work has focused specifically on the TFA and its implementation. Studies have shown that full implementation of the TFA could reduce global trade costs by an average of 14.3%, with higher gains expected for LDCs. Research by Portugal-Perez and Wilson (2012) highlighted the role of logistics infrastructure and institutional quality in shaping the export performance of developing countries, indirectly illustrating the mechanisms through which TFA-type reforms operate. Despite these contributions, the literature remains fragmented: studies tend to focus on specific regions, selected policy dimensions, or individual trade outcomes, and few attempts have been made to provide a comprehensive, systematic overview of the field as a whole. This gap in terms of thematic mapping, methodological diversity and geographic coverage motivate the bibliometric approach adopted in this study.

### **2.4. Bibliometrics as a Tool for Mapping Research Fields**

The bibliometric analysis is an established quantitative method for systematically mapping the intellectual structure of a scientific field. By analyzing patterns of publication, citations, co-authorship and keyword co-occurrence, it allows researchers to identify dominant themes, influential authors, seminal documents and emerging research fronts. Tools such as VOSviewer enable the visualization of bibliographic networks, making it possible to detect thematic clusters and trace the evolution of research over time.

Applied to the field of trade facilitation, bibliometric analysis offers a valuable means of synthesizing a rapidly growing and geographically dispersed literature. It complements traditional narrative reviews by providing a more objective and replicable picture of scientific production. However, it also has limitations: it depends on the coverage and quality of the database used, it may overlook non-indexed publications, and it does not capture the substantive content or quality of individual contributions. These limitations are acknowledged and taken into account in the interpretation of results presented in this study.

## **3. Research Methodology**

Doing bibliometrics is a bit like doing archaeology instead of digging through layers of soil, you dig through layers of academic publications, looking for patterns, connections and traces of how a field of knowledge has taken shape over time. This section walks the reader through the choices we made, the tools we used, and the path we followed to build a meaningful and rigorous picture of the literature on trade facilitation.

### **3.1. Data Source and Observation Period**

When we set out to map the scientific literature on trade facilitation, the first question was



simple but crucial: where do we look ? The answer was Web of Science — not by default, but by choice. This study is based on an analysis of articles, journals and citations related to trade facilitation in the Web of Science database. The study period runs from 2000 to 2024, in order to examine the evolution of scientific production on this subject and to assess whether a growing interest for trade reforms is observable, especially after the entry into force of the Agreement on Trade Facilitation (TFA) in 2017. The choice of Web of Science is justified by its broad multidisciplinary coverage and the scientific quality of the articles it indexes. It also speaks the language of sustainable development literally by mapping scientific publications directly onto the SDGs, which made it the natural home for a study sitting at the crossroads of trade policy and the 2030 Agenda. In addition, this database makes it possible to establish direct links between research results and the Sustainable Development Goals (SDGs)<sup>3</sup> by associating scientific publications with specific themes:

**Table 1 : Sustainable Development Goals.**

| SDG                                | ALC3_Citation_Topics                        |
|------------------------------------|---------------------------------------------|
| 08 Decent Work and Economic Growth | 6.115.1661 Emergency                        |
| 08 Decent Work and Economic Growth | 6.10.373 RuinProbability                    |
| 08 Decent Work and Economic Growth | 6.317.2395 DiminishingManufacturing Sources |
| 08 Decent Work and Economic Growth | 6.115.234 Environmental Kuznets Curve       |
| 08 Decent Work and Economic Growth | 6.317.2518 SustainableDevelopment           |
| 08 Decent Work and Economic Growth | 6.27.2427 MilitaryExpenditure               |
| 08 Decent Work and Economic Growth | 4.61.1820 CreditScoring                     |
| 08 Decent Work and Economic Growth | 6.27.1433 World Trade Organization          |
| 08 Decent Work and Economic Growth | 6.269.1979 Marxism                          |
| 08 Decent Work and Economic Growth | 6.10.82 EconomicGrowth                      |
| 08 Decent Work and Economic Growth | 6.10.465 International Trade                |
| 08 Decent Work and Economic Growth | 1.156.2068 Unemployment                     |
| 08 Decent Work and Economic Growth | 6.10.80 Option Pricing                      |
| 08 Decent Work and Economic Growth | 6.10.590 Wages                              |
| 08 Decent Work and Economic Growth | 6.10.22 Monetary Policy                     |
| 08 Decent Work and Economic Growth | 6.3.744 Trade Unions                        |

*Source: web of science<sup>4</sup>*

We aimed to focus our analysis on the topic of trade facilitation, aligning it with SDG 8: Decent work and economic growth.

### 3.2. Search Strategy

Various stages were used to carry out the research. First, we used "facilitation of exchanges" as the main keyword, applied to all thematic fields of Web of Science, including title, abstract and keywords. We then refined our search by adding "Trade Facilitation Agreement" as the second criterion. Think of it as casting a wide net first, then gradually tightening the mesh. The search combined the terms "trade facilitation", "trade facilitation agreement" and "WTO" using Boolean operators (AND, OR), applied to the title, abstract and keyword fields. No disciplinary filter was applied, we wanted to let the literature speak for itself, across all fields. The only filter we applied was linguistics: English-language articles only, given their dominance in international academic publishing on trade and development.

### 3.3. Corpus Selection, Bibliometric Tools and Methodological Limitations

This process identified a first set of 123 open-access articles written in English. Among these

<sup>3</sup> [https://incites.zendesk.com/hc/en-gb/articles/22586106727185-Sustainable-Development-Goals#h\\_01HPQADEW9ERJDAB3NYQVEEZKA](https://incites.zendesk.com/hc/en-gb/articles/22586106727185-Sustainable-Development-Goals#h_01HPQADEW9ERJDAB3NYQVEEZKA)

<sup>4</sup><https://www.webofscience.com.eressources.imist.ma/wos/woscc/summary/2cac4769-bcfa-4f24-a018-eb24d952625a-013fa09a8e/relevance/1>.

articles, 11 publications deal specifically with the Trade Facilitation Agreement, mentioning it in the title, abstract or keywords. Not every document that appeared in the initial results deserved a place in the final corpus. We carefully went through each result, removing duplicates, setting aside documents that were tangentially related, and keeping only peer-reviewed articles with a genuine focus on trade facilitation. At the end of this patient filtering process, our final corpus stood at 123 articles — 11 of which place the Trade Facilitation Agreement at the very heart of their analysis. To make the selection process as transparent and replicable as possible, each inclusion or exclusion decision was based on explicit criteria: the document had to be a peer-reviewed journal article, written in English, with trade facilitation as a central — not peripheral — theme. Book chapters, conference proceedings and editorial notes were systematically excluded.

Once the corpus was ready, we needed the right lens to read it. That is where VOSviewer came in — a tool that transforms raw citation data into visual maps of knowledge, revealing the hidden connections between authors, themes and ideas that would be impossible to detect by reading each article individually. Through keyword co-occurrence analysis, co-citation networks, and the distribution of publications by year, country and author, we were able to identify who the key players are, what the dominant themes are, and how the field has evolved over two decades. Numbers alone tell part of the story but the maps VOSviewer generates bring it to life. Concretely, keyword co-occurrence analysis helped us detect the thematic clusters that structure the field, co-citation analysis revealed the intellectual foundations on which researchers build their work, and the distribution of publications by year and country allowed us to trace both the geographic spread and the historical momentum of research on trade facilitation.

No method is perfect, and bibliometrics is no exception. We think it is important to be upfront about the boundaries of what this study can and cannot claim. Relying on a single database, however prestigious, means that some relevant work published elsewhere in Scopus, Google Scholar, or non-indexed journals may have slipped through the net. Limiting the corpus to English-language articles also means that valuable contributions from researchers writing in French, Spanish or Arabic may be underrepresented, which is a real issue for a topic so closely tied to the realities of developing countries. Finally, very recent publications from late 2024 may not yet be fully indexed, leaving the most current debates slightly out of the frame. These are not fatal flaws but they are honest ones, and future research would benefit from casting a wider net. That said, we are confident that the corpus assembled here is sufficiently robust and representative to offer a meaningful and credible picture of how the academic community has engaged in trade facilitation over the past two decades.

## **4. Results**

### **4.1. The study of publications and citations**

The number of publications on trade facilitation has increased significantly over the years, as revealed by an analysis. Prior to 2012, there was little work on this topic, indicating a limited interest in it in academic debates. Starting in 2013, the number of publications gradually increases to reach a peak in 2020, coinciding with the entry into force of the Trade Facilitation Agreement (TFA) in 2017. These turning points are not coincidental: the uptick from 2013 reflects the momentum of the Bali Ministerial Conference, while the 2020 peak captures the first empirical assessments of TFA implementations the slight slowdown afterwards representing a natural stabilization rather than a loss of interest. The annual volume remains over 10 items until 2023, even though there was a slight decrease after 2020. The citation analysis indicates that there was limited interest until 2010, but then there was a significant increase after 2011, which resulted in over 300 citations annually in 2022, which then stabilized

at around 200 between 2023 and 2024. A rising citation curve signals not just growth in volume but in intellectual depth researchers increasingly engaging with, debating and building upon each other's work, a clear marker of a maturing field. This dynamic is strongly influenced by the ratification of the TFA, stimulating research and discussions on the subject. Finally, the thematic distribution of publications shows a predominance of social sciences (58.065% in SSCI)<sup>5</sup>, focused on political and economic effects of international trade, followed by emerging contributions (33.871% in ESCI)<sup>6</sup>, reflecting the new dynamics of recent trade agreements. Publications in the SCI-Expanded (19.355%)<sup>7</sup> highlight technical and logistical aspects, highlighting the growing multidisciplinary and interest in the technological implications of trade facilitation. This three-way distribution confirms that trade facilitation is genuinely multidisciplinary: firmly rooted in social sciences, still evolving through emerging journals, and increasingly embracing technical and logistical dimensions. Taken together, these trends rapid growth after the TFA, social science dominance, and emerging technical diversification justify the more granular analyses conducted in the following sections on keyword co-occurrences, co-citation networks, and SDG 8-aligned contributions.

#### **4.2. Keyword Co-occurrence Analysis and Thematic**

What if you could read 123 articles simultaneously and let them speak to each other? That is precisely the logic behind keyword co-occurrence analysis. By identifying which terms consistently appear together across a corpus, this approach reveals the intellectual landscape of a field, its dominant themes, its hidden connections, and its blind spots. We applied this method to our 123 articles using VOSviewer, retaining only keywords appearing at least three times, a threshold that kept the analysis focused on what truly matters. This filter produced 54 meaningful keywords, which VOSviewer then organized into six thematic clusters using association strength normalization, each representing a distinct but connected dimension of trade facilitation literature.

A co-occurrence analysis of the keywords, in this case, is applied to determine the most meaningful relations between the trade facilitation and the sustainable development concepts. The selected approach is premised on the recognition of the keywords that are used in a particular corpus regularly and enable the identification of the latent connections between various themes and issues. To do this, one will have to establish a minimum number of three occurrences per keyword, in order to filter out the analysis to include the most useful and representative words. Using this filter, a list of 54 keywords that pass through this filter in terms of frequency and relevance is created. Subsequently, the keywords are put through the test of the level of co-occurrence, in other words, the degree to which they are associated with other words in the corpus. This process also helps in understanding the relationships that exist among the concepts better thereby explaining the complicated processes that surround the debate over sustainable development and international trade.

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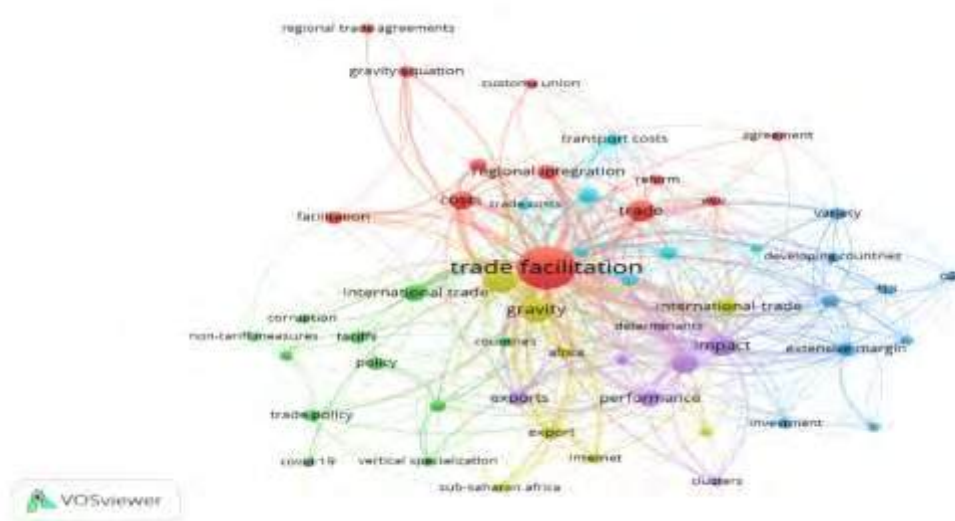
<sup>5</sup> *The Social Sciences Citation Index (SSCI): these publications focus primarily on the political and economic impacts of international trade, such as the effects on countries' economic policies, trade relations, etc.*

<sup>6</sup> *EmergingSources Citation Index (ESCI). This research highlights new issues related to recent trade agreements, reflecting contemporary developments and the challenges that arise with these agreements.*

<sup>7</sup> *The Science Citation Index Expanded (SCI-Expanded), representing 19.355%, focus on more technical and logistical issues of international trade, the technologies used to facilitate trade or the practicalities of supply chains.*



**Figure1: analyses of keywords**



**Source: Author**

The analysis of keywords highlights five main clusters, which correspond to the major axes of academic literature on trade facilitation:

- **Red Cluster: Trade agreements and trade facilitation:** This cluster sits at the very heart of the network and constitutes the backbone of the literature. Its central theme is the role of trade agreements and multilateral frameworks in reducing trade barriers and streamlining customs procedures. The most representative keywords are 'agreement', 'agreements', 'costs', 'customs union', 'facilitation', 'gravity equation', 'reform', 'regional integration', 'regional trade agreements', 'trade', 'trade facilitation', and 'wto'. The objective of this cluster is to examine the role of trade agreements and customs unions in facilitating trade. Agreements and trade facilitation play an important role in demonstrating the strong link between trade integration policies and the elimination of trade barriers. The WTO's role in the implementation of agreements such as the Trade Facilitation Agreement is also brought to the attention. The concepts of costs and non-tariff barriers are explored to assess their effect on the fluidity of trades.
- **Green Cluster : Trade Policies and International Trade :** This cluster examines how trade policy instruments both tariff and non-tariff shape international trade flows in the context of the TFA. The most representative keywords are 'corruption', 'countries', 'covid-19', 'global value chains', 'international trade', 'non-tariff measures', 'policy', 'tariffs', 'trade facilitation agreement', 'trade policy', and 'vertical specialization'. This cluster is oriented towards trade policies, including tariff and non-tariff measures. It discusses the impact of these policies on international trade, particularly within the framework of the TFA. Terms such as policy and trade facilitation show an in-depth analysis of policy reforms aimed at simplifying customs procedures and reducing logistics costs to encourage trade. The presence of 'global value chains' and 'vertical specialization' directly echoes SDG 8 target 8.2, which emphasizes economic diversification and technological upgrading as pathways to higher productivity.
- **Blue Cluster : Export Diversification and Economic Development:** This cluster explores the conditions under which trade facilitation enables developing countries to diversify their exports and access to new markets — a question that is central to the development agenda. The most representative keywords are 'export diversification', 'developing countries', 'ASEAN', 'investment', 'extensive margin', 'diversification', 'intensive margin', 'f13', 'o24', and 'variety'. The objective of this cluster is to explore how to

diversify exports in developing countries, and to analyze the advantages of export diversification for economic growth and to decrease dependence on a limited number of products or markets. It is noted that the ASEAN region has made progress in diversification. This cluster also shows that there is an important role in investments and extensive margins, which assess how new products or markets influence trade. This cluster resonates strongly with SDG 8 targets 8.2 and 8.3, which promote productive diversification, decent job creation, and the development of small and medium enterprises in developing economies.

- **Yellow Cluster : Gravity Modelling :** This cluster brings together the methodological backbone of empirical trade facilitation research, centered on gravity models and their application to trade flows in developing regions. The most representative keywords are 'Africa', 'economic development', 'export', 'gravity', 'gravity model', 'international trade', 'internet', and 'sub-Saharan Africa'. Gravity models are the main part of this cluster in predicting trade flows. It also shows the importance of infrastructure both logistics and digital in trade, especially in sub-Saharan Africa. Terms related to export and economic development underscore the value of developing economies. The strong presence of African economies in this cluster indirectly connects to SDG 8 target 8.1, as gravity-based evidence on trade costs provides the empirical grounding for policies aimed at accelerating growth in the least developed countries.
- **Purple Cluster : Growth, Performance and Productivity:** This cluster focuses on the macroeconomic outcomes of trade facilitation, examining how reforms translate into measurable gains in growth, productivity, and overall economic performance. The most representative keywords are 'clusters', 'determinants', 'exports', 'growth', 'impact', 'performance', and 'productivity'. This cluster examines the economic performance of trade facilitation policies, particularly in terms of economic growth and productivity. It connects most directly to SDG 8 targets 8.1 and 8.2, confirming that the academic community has consistently framed trade facilitation as a lever for sustained and inclusive economic growth.
- **Blue Cluster : Regions, Infrastructure and Costs:** This cluster explores the territorial and infrastructural dimensions of trade facilitation, highlighting how regional dynamics and transport costs condition the effectiveness of facilitation reforms. The most representative keywords are 'ASEAN', 'transport costs', 'infrastructure', and 'liberalization'. This cluster explores regional dynamics, such as ASEAN, and the implications of infrastructure and transport costs on trade facilitation. It also highlights the liberalization processes and their impact. The emphasis on infrastructure connects to SDG 8 target 8.a, which explicitly calls for enhanced Aid for Trade to build trade-related infrastructure in developing countries.

Beyond the thematic clusters, the connection strength analysis reveals how tightly the core concepts of the field are linked to one another. As Figure 3 shows, the network displays an asymmetric distribution, a concentration of weak connections and a scarcity of strong ones which is typical of a maturing but still fragmented research field.

**Figure 2: connection strength (this graph shows an asymmetric distribution of connections in the network, with a concentration of weak connections and a scarcity of strong connections)**



Source: author

Trade facilitation has a direct and significant impact on economic performance, including cost reduction and improved trade efficiency, as shown by the relationship between 'trade facilitation' and 'impact' (force 12). (Beverelli, Neumueller, and Teh 2015a; Bonuedi, Kamasa, and Opoku 2020a; Ding, Zhu, and Zhao 2023; Guo, Hamzah, and Chin 2024; Hu et al. 2022a; Marquez-Ramos, Martinez-Zarzoso, and Suarez-Burguet 2012; Pan et al. 2023; Persson 2012, 2013; Tongur, Turkcan, and Ekmen-Ozcelik 2020; Yeo and Deng 2020).

The 'gravity model' (force 12) connection highlights the significance of trade flows suggested by these models in evaluating the effectiveness of trade facilitation policies. (Abe and Wilson 2011a; Billon, Rodriguez-Andres, and Rodriguez-Crespo 2023; Billon and Rodriguez-Crespo 2020; 2013; Fan et al. 2022; Host, Skender, and Zaninovic 2019; Jordaan 2014; Persson 2008; Shepherd and Wilson 2007a, 2009a; Suryanta and Patunru 2023; Zaninovic 2022). The importance of trade facilitation in boosting economic growth, productivity, and business development is highlighted by the link to 'growth' (force 10) (Hoekman and Njinkeu 2017a; Hu et al. 2022b; Pan, He, and Liu 2022; Parteka 2020; Persson 2013; Safaeimanesh and Jenkins 2021a; Saslavsky and Shepherd 2014a; Takpara, Djiogap, and Sawadogo 2023; Vogel 2024). Effective infrastructures are necessary to support trade facilitation, especially in developing regions, as revealed by the strong association between 'trade facilitation' and 'infrastructure' (FORCE 4) (Abe and Wilson 2011a; Guo, Hamzah, and Chin 2024; Hoekman and Njinkeu 2017b; Tongur, Turkcan, and Ekmen-Ozcelik 2020). This means although their relationship is not the strongest in the network, these two concepts are frequently associated in a significant number of publications.

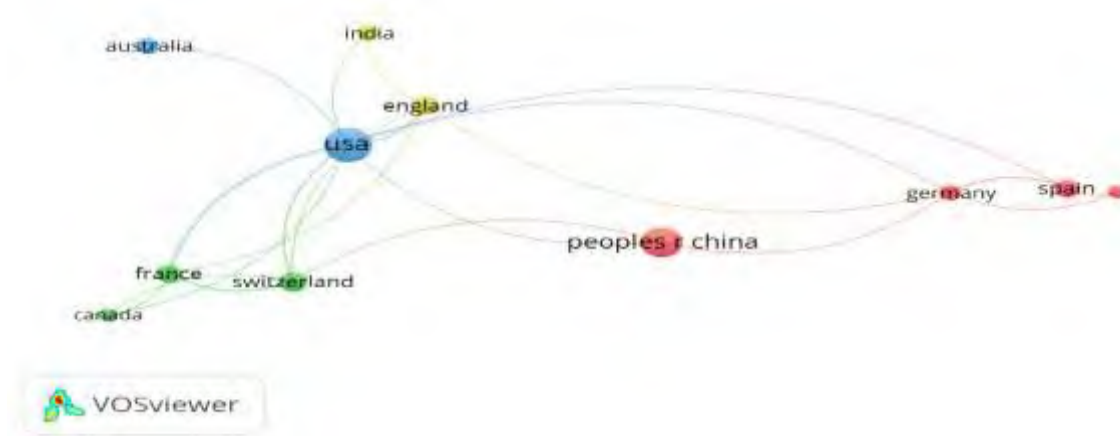
Overall, the keyword co-occurrence analysis reveals three major tendencies in the literature. Trade facilitation research is firmly rooted in a policy-oriented tradition centered on trade agreements, customs reform, and WTO frameworks. The field has progressively expanded to incorporate development concerns such as export diversification, infrastructure, and productivity, which connect directly to the targets of SDG 8. Finally, the asymmetric distribution of connection strengths confirms that the field remains somewhat fragmented, which reinforces the relevance of a comprehensive bibliometric approach such as the one adopted in this study.

#### 4.3. Analysis of citations by country:

The method chosen is based on an analysis of citations to examine how articles published in different countries are cited by other scientific works. The unit of analysis is the country, which allows for an assessment of the total number of citations received by affiliated publications in each nation. A threshold of 5 documents per country has been applied, with no restriction on

the number of citations, to include all nations exceeding this criterion. Of the 49 countries analyzed, 11 fulfilled these conditions:

**Figure 3: collaboration between countries**



**Source : author**

We then associated the documents resulting from collaborations with each country, as well as the partner country of each collaboration, and presented the results in the form of a table below

**Table2: scientific collaboration between countries on trade facilitation**

| Countries | COLLABORATING COUNTRY | DOCUMENT                                                                           | Countries   | COLLABORATING COUNTRY | DOCUMENT                                                                                                |
|-----------|-----------------------|------------------------------------------------------------------------------------|-------------|-----------------------|---------------------------------------------------------------------------------------------------------|
| USA       | CHINA                 | (Liang and al. 2021)                                                               | CHINA       | SWITZERLAND           | (Monkelbaan 2014)                                                                                       |
|           | SWITZERLAND           | (Balistreri and al. 2018a; Balistreri, Tarr, and Yonezawa 2015a)                   |             | GERMANY               | (Bonuedi, Kamasa, and Opoku 2020b)                                                                      |
|           | ENGLAND               | (Carballo and al. 2024; Hillberry and Zhang 2018a; Hoekman and al. 2022)           | SWITZERLAND | FRANCE                | (Decreux and Fontagne 2015; Fontagne, Orefice, and Piermartini 2020; de Melo, Sorgho, and Wagner 2024a) |
|           | FRANCE                | (Arvis and al. 2016a; Bouet and al. 2022; Lee, Owen, and van der Mensbrugghe 2009) |             | CANADA                | (de Melo, Sorgho, and Wagner 2024a)                                                                     |
|           | CANADA                | (Nazif and Jenkins 2023)                                                           |             | ENGLAND               | (Hoekman and Inama 2018)                                                                                |
|           | INDIA                 | (Hoekman and al. 2022)                                                             | SOUTH KOREA | SPAIN                 | (Martinez-Zarzoso and Rudolf 2020)                                                                      |
|           | AUSTRALIA             | (Fernandes, Hillberry, and Alcantara 2021)                                         |             | GERMANY               | (Martinez-Zarzoso and Rudolf 2020)                                                                      |
|           | SPAIN                 | (Turnes and Ernst 2015)                                                            |             |                       |                                                                                                         |
|           | GERMANY               | (Carballo and al. 2024)                                                            |             |                       |                                                                                                         |

**Source: auteur**

This analysis highlights the most influential countries in terms of scientific production and citations in the studied network “TRADE FACILITATION”. The US (30; 718), China (22; 112) and Switzerland (10; 158) appear as the most cited, countries such as France (8; 145), England (9; 269) and Australia (7; 121) play an intermediate role but with a strong impact.

#### 4.4. Analysis of the Importance of Sources in the Citation Network:

The analysis is based on a quotation approach, with sources as the unit of analysis. The selection criteria include a minimum of three documents per source, with no minimum threshold for citations. Of the 71 sources identified, 13 were selected based on their total strength of citation links, allowing identifying those with the most academic interconnections:

**Table3: source of publication**

| Source                                                | Documents | Citations |
|-------------------------------------------------------|-----------|-----------|
| world bank economic review                            | 3         | 240       |
| journal of African economies                          | 5         | 48        |
| journal of international trade & economic development | 3         | 111       |
| sustainability                                        | 8         | 38        |
| journal of economic integration                       | 12        | 74        |
| review of international economics                     | 3         | 40        |
| world development                                     | 4         | 291       |
| world trade review                                    | 3         | 114       |
| economics-the open access open-assessment e-journal   | 3         | 22        |
| world economy                                         | 6         | 45        |
| agriculture-Basel                                     | 3         | 29        |
| journal of east Asian economic integration            | 3         | 31        |
| east Asian economic review                            | 3         | 19        |

**Source: author**

In the analysis, four main clusters were identified:

- Cluster 1 consists of prominent sources for the economy and economic integration, including the World Bank Economic Review (240 citations) and Journal of Economic Integration.
- Cluster 2, which is dominated by World Development (291 citations), and also deals with economic development and global trade.
- Cluster 3 is concentrated on the Asian economy, and uses sources such as Journal of East Asian Economic Integration
- Cluster 4 is focused on African economic dynamics and international trade, which is also represented by the Journal of African Economies and World Trade Review.

**Figure 4: connection between the sources of publication**



**source: author**



Clusters 1 and 2 hold the most weight due to their connections and citation volume, and clusters 3 and 4 offer an essential regional perspective for concentrating on Asia and Africa.

#### 4.5. Analysis of scientific collaborations:

For this analysis in VOSviewer, the following criteria have been defined: the type of analysis chosen is co-publication (co-authorship), with the unit of analysis centered on authors. Regarding the minimum thresholds, selected authors had to meet the following conditions: publish at least 2 documents, without a minimum threshold of citations (0 citations). Of the 273 original authors, 27 met these criteria.

**Figure 5: scientific collaboration**



Source: author

#### 4.6. Cluster analysis

The cluster organization highlights sub-groups of researchers working on similar topics:

Cluster 1, for example, includes AkintolaAbdallah, Antimiani Alessandro, BoughanmiHoucine and ZaibetLokmanis therefore part of an applied economic approach with a strong focus on international trade relations, regional integration and agricultural value chains (Boughanmi et al. 2021; Boughanmi, Al-Shammakhi, and Antimiani 2016). While Cluster 2 brings together Balistreri Edward J., Tarr David G. and YonezawaHidemichi, take an analytical approach to examine the economic and social effects of regional integration in Africa, with particular emphasis on commercial cost reductions and their implications for wealth development and redistribution (Balistreri et al. 2018b; Balistreri, Tarr, and Yonezawa 2015b).

Shepherd and Wilson, who belong to Cluster 8, have a significant concentration of influence and impact. Their work is widely cited and recognized in the scientific literature. They employ both quantitative and empirical methods to analyze factors that influence the flow of trade and the development of transportation infrastructure. (Shepherd and Wilson 2007a, 2009a).

Cluster 4 (Jenkins Glenn P. and Safaeimanesh Shahrzad) is one of the groups that have recently emerged with similar characteristics and are exploring how enhanced trade can foster sustainable development and economic integration in West and Southern Africa using an economic and quantitative perspective.(Safaeimanesh and Jenkins 2021b, 2021a). Again, the BhartiNalin and KumariMamtaCluster 3 takes an economic and political perspective, with a special focus on post-crisis trade reforms (Kumari and Bharti 2021b, 2021a).

Some individual researchers are also distinguished by a strong impact despite the absence of connections, such as (Beverelli, Neumueller, and Teh 2015b; Beverelli and Ticku 2022a), Hoekman Bernard and SalimRuhul, which exceed the 4 standard citations per document

(Hoekman 2020; Hoekman et al. 2022; Hoekman and Inama 2018; Hoekman and Njinkeu 2017a)(Foo, Lean, and Salim 2020; Nathoo et al. 2021), reflecting high academic recognition without collaborative commitment.

Several other individual authors, such as Martinez-ZarzosoInmaculada (Cluster 14) (Marquez-Ramos, Martinez-Zarzoso, and Suarez-Burguet 2012) and Persson Maria (Cluster 15) (Persson 2008, 2012, 2013), also show high citation levels, Although they are not actively involved in an extensive scientific network.

In summary, this analysis highlights a fragmented network where some authors impose themselves by their scientific visibility without being integrated into a collaborative set, while others show high productivity but remain limited in terms of academic influence.

#### 4.7. Time analysis:

Time analysis reveals that the researchers in this network have been published at various times, with some having marked the scientific field for a long time, while others are emerging more recently.

Oldest contributions date back to 2008 with Wilson John S (Abe and Wilson 2011a; Portugal-Pererz and Wilson 2009a; Shepherd and Wilson 2007a, 2009a; J. Wilson, Mann, and Otsuki 2003a; J. S. Wilson, Mann, and Otsuki 2005), while researchers such as Ben Shepherd (2011.5) (Arvis et al. 2016b; Saslavsky and Shepherd 2014a; Shepherd's 2010a, 2013a; Shepherd and Wilson 2007a, 2009a) continued to maintain their influence over time. By contrast, more recent researchers such as Liu Rong and Pan Kang, who published in 2022 (Pan et al. 2023; Pan, He, and Liu 2022), or Bharti Nalin and KumariMamta in 2021 (Kumari and Bharti 2021b, 2021a), emerge with ongoing contributions of assessment and growing impact.

#### 4.8. Analysis of the Total Strength of Links and Documents

The analysis chosen for this project is based on citations, with a unit of analysis focused on documents. This means that each document is analyzed according to the number of citations it receives or gives, making it possible to identify the most influential publications within the academic network. To make sure that all 123 documents in the network are covered completely, the minimum threshold has been set at 0 citations per document. This approach ensures that potentially significant documents are not excluded, even if they do not yet have citations. To sum up, the analysis was able to take into account all 50 documents without any extra filtering. The Total Link Strength (Total Citation Links) was calculated for every document, highlighting those with the most connections to other publications.

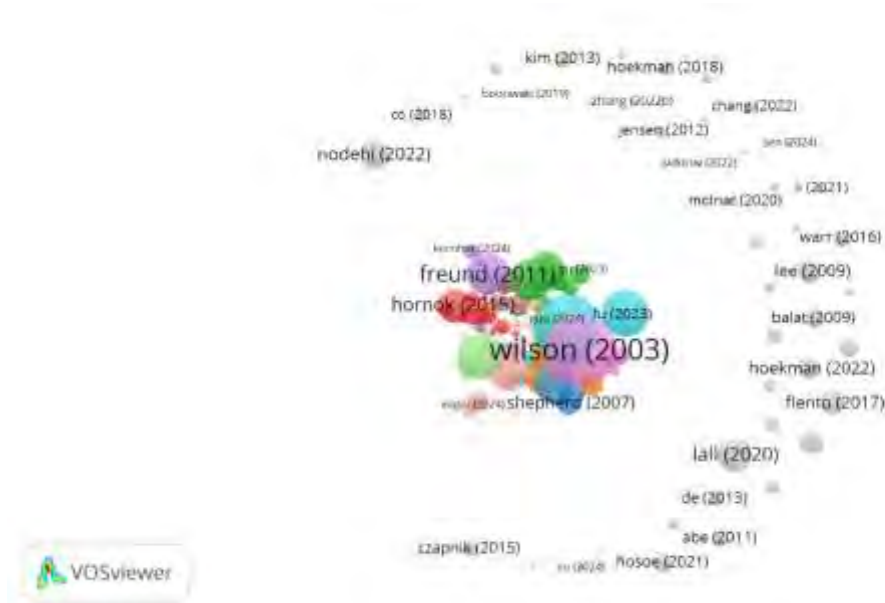
According to the analysis of the selected papers (Wilson's 2003) article has the highest level of influence, with 170 citations and a TLS<sup>8</sup> of 25, demonstrating its key position and significant impact on the academic community. In second place, Beverelli (2015) totals 71 citations and a TLS of 14, indicating a significant contribution to trade facilitation. The third position goes to (Persson 2013), which has 58 citations and a TLS of 13, confirming its significant impact. Other influential articles include (Hillberry and Zhang 2018a) and (Fan and al. 2022) each with 10 citations and a TLS of 10, as well as (Freund and Rocha 2011) with 61 citations and a TLS of 9. This work is the main reference in trade facilitation and international trade impact, providing essential analyses on issues and mechanisms related to this theme. Documents such as (Guo, Hamzah, and Chin 2024) and (Fontagne, Orefice, and Piermartini 2020) show a moderate

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<sup>8</sup> **The Total Link Strength (TLS) in VOSviewer** is a measure that reflects the importance of a document or an author in a network of citations or co-occurrences. The TLS is calculated taking into account the strength of connections between a document (or an author) and other documents or authors in the network

number of citations (respectively 0 and 22 citations) but maintain a high TLS, This shows that they are well connected to other articles and play a key role in thematic discussions.

**Figure 6: the most influential documents**



Source: author

#### 4.9. Articles related to the trade facilitation agreement:

Among the 123 articles constituting our corpus, 11 were identified as treating the Trade Facilitation Agreement explicitly — meaning the TFA appears directly in their title, keywords, or abstract. These 11 articles represent a focused analytical subset, selected precisely because they allow us to zoom in on the most direct connections between trade facilitation reforms and the specific targets of SDG 8. While the broader corpus maps the general intellectual landscape of the field, this subset enables a more granular examination of what the literature actually says about the TFA's contribution to sustained economic growth (8.1), productive diversification (8.2), SME support (8.3), and Aid for Trade (8.a).

As part of this research, an in-depth analysis of trade facilitation related to UN Goal 8 was conducted on a set of 123 articles from the Web of Science database. After a first phase of review, a targeted selection of 11 articles was made by incorporating an additional criterion: the explicit presence of the World Trade Organization (WTO) Agreement on Trade Facilitation (TFA) in the title, keywords or abstract. First, we will classify the articles according to their main theme. This classification will allow the grouping of articles that deal with similar subjects or which fall within common problems, such as the economic, political or social impacts of the agreement, technical and logistical aspects of trade facilitation. In a second step, the articles will be classified according to the targets of UN Goal 8, which aims at promoting sustained economic growth, productive employment and decent work for all.

##### 4.9.1. Thematic analysis:

Reading these 11 articles, four thematic blocks emerge naturally, each illuminating a distinct dimension of how the TFA operates in practice.

The first block covers the macroeconomic effects and economic development of the TFA, represented by Flento and Ponte (2017) and Hillberry and Zurita (2022). These two studies converge on a common message: the TFA generates measurable macroeconomic gains, particularly through the reduction of transaction costs and the stimulation of export capacity.

However, they also highlight that these gains are unevenly distributed, with larger economies capturing a disproportionate share of the benefits.

The second block focuses on the commitment and implementation of the TFA, bringing together Czapnik (2015), Flento and Ponte (2017), Hillberry and Zurita (2022), Kumari and Bharti (2021), and de Melo, Sorgho, and Wagner (2024). These studies collectively show that implementation progress varies significantly across countries, and that institutional capacity — rather than political will — is often the binding constraint. This finding has direct implications for least developed countries, which face the steepest implementation challenges.

The third and largest block examines the impact of the TFA of trade flows, drawing on Beverelli, Neumueller, and Teh (2015), Beverelli and Ticku (2022), Co et al. (2018), Czapnik (2015), Flento and Ponte (2017), Fu, Chen, and Xue (2023), Hillberry and Zurita (2022), Kumari and Bharti (2021), and de Melo, Sorgho, and Wagner (2024). The consensus across these studies is clear: TFA implementation is associated with significant increases in trade volumes, particularly for developing countries. Gravity model-based analyses dominate this block, confirming the methodological centrality of this approach in the field.

The fourth block addresses cost reduction and customs efficiency, covered by Beverelli and Ticku (2022), Co et al. (2018), Fu, Chen, and Xue (2023), de Melo, Sorgho, and Wagner (2024), and Popovic-Petrovic (2023). These studies demonstrate that streamlining customs procedures translates into tangible reductions in trade costs — effects that are particularly significant for time-sensitive goods and for landlocked or geographically remote countries.

#### **4.9.2. Alignment with SDG 8 Targets**

Mapping these 11 articles onto the specific targets of SDG 8 reveals both the strengths and the gaps of the existing literature.

Regarding target 8.1 sustaining per capita economic growth — the studies by Beverelli, Neumueller, and Teh (2015), Beverelli and Ticku (2022), Fu, Chen, and Xue (2023), and de Melo, Sorgho, and Wagner (2024) highlight economic growth driven by cost reductions and increased exports. These works provide solid empirical grounding for the idea that trade facilitation reforms contribute to aggregate growth, though they rarely disaggregate effects by income groups or development level.

Regarding target 8.2 productive diversification and technological upgrading — the studies by Beverelli and Ticku (2022), Co et al. (2018), Flento and Ponte (2017), Fu, Chen, and Xue (2023), Hillberry and Zhang (2018), Kumari and Bharti (2021), and Popovic-Petrovic (2023) underscore the impact of trade facilitation on diversification and access to new markets. This is the most densely covered target in the subset, reflecting the field's strong interest in export diversification as a development pathway.

Regarding target 8.3 — support for SMEs and entrepreneurship — only Co et al. (2018) and Fu, Chen, and Xue (2023) address this dimension explicitly. This is a striking gap: despite the theoretical importance of SME integration into global value chains, the empirical literature on how the TFA specifically benefits small producers and entrepreneurs remains remarkably thin. Regarding target 8.a — Aid for Trade and support for least developed countries — the studies by Czapnik (2015), Flento and Ponte (2017), Hillberry and Zurita (2022), and de Melo, Sorgho, and Wagner (2024) address this target directly. These works confirm that LDCs stand to gain the most from TFA implementation, but also face the greatest implementation barriers — a tension that calls for more targeted technical assistance and capacity-building efforts.

Stepping back from this detailed mapping, three limitations of the existing literature deserve attention. First, the geographic coverage is heavily skewed towards Asia and Sub-Saharan Africa, leaving regions such as North Africa, the Middle East, and Latin America largely underexplored a gap that this study itself helps to partially address. Second, the methodological landscape is dominated by gravity models and cost analyses, with relatively few qualitative or

mixed-method studies that could capture the institutional and political dimensions of TFA implementation. Third, and perhaps most importantly, the dimension of decent work which lies at the very heart of SDG 8 is almost entirely absent from these 11 studies. The employment and labor market implications of trade facilitation reforms remain a largely unexplored frontier, representing a significant opportunity for future research.

## **5. Discussion :**

Since the Agreement on Trade Facilitation (TFA) came into effect in 2017, trade facilitation has emerged as a rapidly developing scholarly field of study. It examined patterns of publications and contributions of academia in order to reveal how the production of scientific work on the topic has changed over time. Through bibliometrics, it was established that the rate of publication had been steadily rising since 2013 up to 2020 which asserted the recognition of the significance of custom and logistics transformations in global commerce. The citation analysis shows that the United States, China and Switzerland have the most influential publications in France, England and Australia having an intermediate significant role to play. Wilson (5 articles of 145 citations and 1 article of 170 citations) and Shepherd (230) are the most cited authors since they have contributed significantly to the existing knowledge of the mechanisms that promote trade. Wilson also emphasized the significance of infrastructural and custom reforms to enhance performance of the emerging economies (Abe and Wilson 2011b; Portugal-Pererz and Wilson 2009b, 2012; Shepherd and Wilson 2007b, 2009b; J. Wilson, Mann, and Otsuki 2003b). Shepherd researched the effect of trade delays on the performance of companies and the diversification of exports in geographical locations (Arvis et al. 2016c; Saslavsky and Shepherd 2014b; Shepherd 2010b, 2013b; Shepherd and Wilson 2007c, 2009c). An analysis of the co-occurrence of key words has identified several key areas of research. It is also believed that trade efficiency is one of the driving forces due to the close relationship between trade facilitation and impact (Force 12). It can be observed that the connection with the force of 10 (growth) affects productivity and economic development positively. Moreover, the fact that trade facilitation is linked to infrastructure (force 4) underlines the importance of infrastructure related to logistics in the process of trade optimization, especially in developing countries. Article discussion concerning the Trade Facilitation Agreement. Through 11 articles, particular to TFA, it is disclosed that there are various ways of analyzing its economic influence, execution and trade tactics effects. on top of this, the articles dwell on central themes, varying between macroeconomic effects and logistics and customs efficiency problems. The organization of articles based on their broad theme has helped comprehend the variety of the research angles covered. Although certain articles dwell on how the agreement is intended to be implemented and what challenges the institution faces, others bring out how it has a direct impact of increasing the volume of trade, cost reduction, and economic growth. These findings point to the fact that the TFA is used as an instrument to plan international trade, particularly in developing and emerging economies. The promotion of inclusive and sustainable growth includes a significant key role of trade facilitation which is proved by the correspondence of research to UN Goal 8 targets. Furthermore, different research has been developed to determine the effects of TFA on economic diversification (8.2) and the support to SMEs (8.3), and it is worth mentioning that it may enhance the global market and competitiveness of local businesses. Other studies in this article have also indicated that simplified customs processes and enhanced trade infrastructure can directly mitigate trade inequalities and speed up export, which is also in line with Target 8.a.

Another observation that can be made based on the comparative analysis of the results of the chosen articles points to the heterogeneity of ERA benefits based on the national circumstances. Although there are cases of marginal improvement in some of the advanced economies, which are enjoying the benefits of established infrastructure, the developing countries are recording



huge gains in terms of efficiency in terms of trade and low logistics costs. This gap implies that technical and financial assistance is required to make the TFA a successful intervention in the least developed economies.

## 6. Conclusion

Trade Facilitation Agreement (TFA) has become a major force of international trade and has raised increasing scholarly research interest. The bibliometric analysis will ensure that there is a massive growth of publications and citation on this topic since 2013, and there were the most active years in 2020. The study also states that key word co-occurrence was used to bring out key themes such as trade barrier reduction, importance of infrastructure, and economic impacts of custom reforms. The development of infrastructure and simplification of custom processes are also significant contributors to accelerating international trade and economic growth, especially in the developing nations as pointed out by Wilson and Shepherd among others as powerful writers in this area. In their analysis, they also reveal that the TFA is within a wider process of creating greater economic integration in the world and national competitiveness. Last but not least, the grouping of items based on UN Goal 8 targets brings forward the role of trade facilitation in terms of economic growth, diversification of exports and support to SMEs. Additionally, to produce the results on its long-term effects, the additional research on the TFA should be conducted with the focus on the exploration of the impact of technological advancements and regional policies on the trade flow in order to improve the perception of the relations between the trade, the development, and sustainability.

The citation analysis shows that the United States, China and Switzerland have the most influential publications in France, England and Australia having an intermediate significant role to play. Wilson (5 articles of 145 citations and 1 article of 170 citations) and Shepherd (230) are the most cited authors since they have contributed significantly to the existing knowledge of the mechanisms that promote trade. Wilson also emphasized the significance of infrastructural and custom reforms to enhance performance of the emerging economies (Abe and Wilson 2011b; Portugal-Perez and Wilson 2009b, 2012; Shepherd and Wilson 2007b, 2009b; J. Wilson, Mann, and Otsuki 2003b). Shepherd researched the effect of trade delays on the performance of companies and the diversification of exports in geographical locations (Arvis et al. 2016c; Saslavsky and Shepherd 2014b; Shepherd 2010b, 2013b; Shepherd and Wilson 2007c, 2009c). The geographic concentration of influential publications in a handful of high-income countries raises an important question of representativeness: the voices and experiences of developing and least developed countries — which stand to gain the most from TFA implementation — remain underrepresented in the most cited works. This is a structural bias that the field has yet to fully address.

An analysis of the co-occurrence of keywords has identified several key areas of research. It is also believed that trade efficiency is one of the driving forces due to the close relationship between trade facilitation and impact (Force 12). It can be observed that the connection with the force of 10 (growth) affects productivity and economic development positively. Moreover, the fact that trade facilitation is linked to infrastructure (force 4) underlines the importance of infrastructure related to logistics in the process of trade optimization, especially in developing countries.

Through 11 articles particular to TFA, it is disclosed that there are various ways of analyzing its economic influence, execution and trade tactics effects. On top of this, the articles dwell on central themes, varying between macroeconomic effects and logistics and customs efficiency problems. The organization of articles based on their broad theme has helped comprehend the variety of the research angles covered. Although certain articles dwell on how the agreement is intended to be implemented and what challenges the institution faces, others bring out how it

has a direct impact of increasing the volume of trade, cost reduction, and economic growth. These findings point to the fact that the TFA is used as an instrument to plan international trade, particularly in developing and emerging economies. The promotion of inclusive and sustainable growth includes a significant key role of trade facilitation which is proved by the correspondence of research to UN Goal 8 targets. Furthermore different research has been developed to determine the effects of TFA on economic diversification (8.2) and the support to SMEs (8.3), and it is worth mentioning that it may enhance the global market and competitiveness of local businesses. Other studies in this article have also indicated that simplified customs processes and enhanced trade infrastructure can directly mitigate trade inequalities and speed up export, which is also in line with Target 8.a. Taken together, these findings paint a picture of a research field that has made genuine progress in documenting the benefits of the TFA, while leaving significant gaps particularly regarding the employment and decent work dimensions of SDG 8, which remain largely absent from the empirical literature. Another observation that can be made based on the comparative analysis of the results of the chosen articles points to the heterogeneity of TFA benefits based on the national circumstances. Although there are cases of marginal improvement in some of the advanced economies, which are enjoying the benefits of established infrastructure, the developing countries are recording huge gains in terms of efficiency in terms of trade and low logistics costs. This gap implies that technical and financial assistance is required to make the TFA a successful intervention in the least developed economies.

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