Morocco's trade facilitation performance: A Benchmarking Analysis

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Abstract

Trade facilitation has attracted considerable interest as a central concept in international trade, especially for developing countries. This paper examines trade facilitation reforms in Morocco, focusing on its performance relative to similar economies in the MENA region, Sub-Saharan Africa, and the Lower-Middle-Income group. Using a comparative benchmarking approach spanning from 2010 to 2023, the study analyzes five composite indicators that measure both policy contributions and outcome: the World Bank's Trading Across Borders (TAB) and Logistics Performance Index (LPI), the World Economic Forum's Enabling Trade Index (ETI), the OECD's Trade Facilitation Indicators (TFIs), and the UN's Global Survey on Trade Facilitation and Paperless Trade Implementation (GSTF-PTI). The findings reveal contrasting trends. While Morocco demonstrates strong regional outcomes in reducing trade times and costs, as evidenced by the TAB indicators, its performance on the LPI and ETI is less positive. In terms of policy contributions, Morocco exhibits a positive trend compared to the benchmark groups, showing progress in several areas, but also highlighting delays and opportunities for improvement. A detailed analysis of sub-indicators within the OECD's TFIs and the GSTF-PTI reveals that Morocco excels in transparency, formalities, advance rulings, governance and impartiality, and fees and charges, but lags behind in indicators related to cooperation and institutional arrangements. These findings underscore the need to prioritize trade facilitation reforms in Morocco while acknowledging the challenge of sustaining momentum. Future research should extend the analysis to similar countries, validating the indicators' relevance and exploring the construction of a trade facilitation index system tailored to the Moroccan territory.

Keywords— Trade Facilitation, WTO Trade Facilitation Agreement, Benchmarking, Trade Facilitation Indicators, Monitoring and Evaluation, Morocco, MENA, Sub-Saharan Africa

I. INTRODUCTION

Since the 1996 Singapore Ministerial Conference, trade facilitation has attracted considerable interest as a central concept in international trade. Today, it is mentioned in most modern trade agreements, and the study of its beneficial effects has gained increasing interest. Recently, it has become a focal point of numerous trade initiatives globally. Indeed, this growing importance has been further catalyzed by the 2017 entry into force of the World Trade Organization's (WTO) Trade Facilitation Agreement (TFA) and the increasing need for its implementation.

The positive economic impact of trade facilitation in reducing trade costs is well documented (Arvis et al., 2013; Hoekman & Nicita, 2011; Moïsé & Sorescu, 2013; OECD, 2018), as is its positive effect on key export performance indicators. Implementing trade facilitation reforms enhances export growth (Arvis et al., 2018; Portugal-Perez & Wilson, 2012; Zaki, 2014), export diversification (Bourdet & Persson, 2014; Dennis & Shepherd, 2011; Lee & Kim, 2012), and the probability and propensity of firms to export internationally (Hoekman & Shepherd, 2015; Seck, 2017; Shepherd, 2013). We also know that engaging in international agreement like TFA has a positive impact on international trade, welfare, international and regional integration (Beverelli et al., 2023; Hillberry & Zhang, 2015, 2018; Valensisi et al., 2016).

Recognizing the numerous advantages offered by the TFA's full implementation, several developing countries, including Morocco, have ratified its provisions. The Kingdom ratified the TFA in 2019 and notified 91.2% of Category A measures, positioning it among the countries with the highest implementation rate in the MENA region and Sub-Saharan Africa. This decision has directly impacted Morocco's export performance, notably by improving its intensive export margin by 6.3%, as evidenced in a recent study (CHEKROUNI & BENCHEKARA, 2024).

However, a review of the existing literature on trade facilitation reveals a near-complete absence of studies focusing on impact assessment using performance and benchmark indicators compared to those relying on econometric methods. This article aims to address this gap by emphasizing the analysis of Morocco's performance and regional standing in trade facilitation, using a carefully selected set of indicators.

Considering the complexity of the trade facilitation concept, this study considers both broad and narrow indicators, as well as those measuring policy contributions and outcomes. Given the numerous existing indicators, this analysis focuses on those frequently used in the economic literature to assess the economic impact of trade facilitation reforms. These include the Doing Business Trading Across Borders (TAB) indicators and the Logistics Performance Index (LPI) from the World Bank Group, the Enabling Trade Index (ETI) from the World Economic Forum (WEF), the Trade Facilitation Indicators (TFIs) from the OECD, and the indicators from the UN Global Survey on Trade Facilitation and Paperless Trade Implementation (GSTF-PTI).

Based on data availability and spatiotemporal coverage, the benchmark employed in this study relies on two primary criteria. The first is geographical, comparing Morocco to the Middle East and North Africa (MENA) region and Sub-Saharan African countries. The second relates to income level, positioning Morocco within the lower-middle-income bracket according to the World Bank classification.

This study complements our previous work (CHEKROUNI & Mohamed, 2023), which attempted to measure Morocco's performance using similar indicators, and that of (Chauhan & Vijayakumar, 2021) conducted in India. However, it stands out as one of the first, and possibly the first to our knowledge, that attempts to measure trade facilitation by positioning the country (Morocco) within its regional and international context. Additionally, it utilizes more up-to-date data, providing a more recent analysis of the subject. Furthermore, the evaluation process compares the composite indicators used and tries to identify those that best reflect the commitments made. This ultimately leads to recommendations aimed at optimizing the effectiveness of Morocco's reform implementation.

The remainder of this paper is structured as follows: Section 1 reviews the relevant literature. Section 2 explains the methodology and presents the data used. Section 3 presents our main results and discussions. Finally, the last section summarizes the key conclusions and policy implications.

II. LITERATURE REVIEW

1. Defining trade facilitation

It may come as a surprise that there is no standard definition of trade facilitation. While the international community acknowledges the need for reform to further enhance trade flows, there is no universally agreed upon or formal definition of the concept.

Given the diverse interpretations of trade facilitation, numerous definitions have been proposed by academic literature and international organizations. However, conceptual analysis reveals the development of their own understanding of what trade facilitation should encompass. The approaches used are far from uniform (Nguyen et al., 2016; Wilson et al., 2002). Consequently, the way the concept is defined depends on the scope of the agreement or study. For instance, the (WTO, 2015) encompassed eleven different definitions of the concept, while (Grainger 2008) listed eighteen general concepts of the term.

However, it is possible to classify how the term has been used in the relevant literature according to two spectrums or fields of application: broad and narrow. Under the broad spectrum, researchers have focused on the concept as a process of optimizing trade costs by implementing simplified and uniform procedures for international trade (Moïse et al., 2011; Moïse & Sorescu, 2013). Trade facilitation measures can be considered as processes and policies that can reduce the time, cost, and uncertainty of international transactions (Nguyen et al., 2016). They can encompass procedures at the border, up to the border, and even extend beyond the border.

Similarly, the OECD's definition includes international trade procedures, the flow of information related to them, including documents and data, as well as payments throughout the supply chain. Trade facilitation refers the "simplification of trade procedures, understood as "*the activities, practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade.*" (Moïsé et al., 2011, p. 7). This definition also includes measures taken behind the borders, for example, e-commerce, product standards, conformity assessment measures, and logistics services. From this perspective, it includes cross-border processes and other processes involved in international trade.

In the narrow sense, trade facilitation focuses on streamlining border procedures. It is centered on operational aspects of international trade and particularly concentrates on border-related issues such as customs efficiency, documentary and procedural requirements, and the logistics of moving goods across borders. Belonging to this operational aspect of international trade, the WCO defines trade facilitation as "*The simplification and harmonization of international trade procedures, including activities, practices, and formalities involved in collecting, presenting, communicating, and processing data required for the movement of goods in international trade*." (WCO, 2018, p. 38).

The practical definition of trade facilitation is also consistent with that of the WTO and essentially refers to reform measures limited to the logistics of customs clearance of goods in ports or to more efficient documentation of cross-border trade-related traffic. This definition primarily covers customs regulations and corresponds to the costs of commercial transactions at the border. The concept of trade facilitation under the auspices of the WTO therefore refers to measures "*to expedite the movement, release and clearance of goods, including goods in transit*." (WTO, 2015, p. 35).

In summary, trade facilitation continues to attract growing interest. For years, it has been at the heart of the concerns of international organizations and academia alike. Although the definition of trade facilitation varies considerably, its fundamental pillars converge towards the same objective.

2. Trade Facilitation Indicators

As well as the heterogeneity of explanations surrounding the concept of trade facilitation, methods for evaluating the implementation of related reforms or their impacts continue to generate developments and discussions, subject to controversies and debates. Numerous evaluation methods have been employed, and many composite indicators and indices have been constructed by international organizations or specialized academic literature. Various measures and indicators are available to assess and measure the effectiveness of trade facilitation efforts, highlighting the importance of ongoing monitoring and evaluation in this area. For instance, (Orliac, 2012) highlights the existence of more than 12 indicators relating to trade facilitation, while the (WTO, 2015) mentions more than 33. These measurement indicators differ in their scope, coverage, evaluation methods, and calculation methods. Consequently, despite their frequent overlaps, their exhaustive categorization proves challenging.

However, the current literature on measuring the level of trade facilitation is evolving primarily in two directions. The first concerns the selection of indicators, while the second focuses on weighting through a relatively comprehensive evaluation system.

Regarding the selection of indicators, there are particularly two categories. While the first draws directly from indices issued by international organizations (Jean-François et al., 2018; Moïse & Sorescu, 2013; United Nations, 2023; WEF, 2016; World Bank, 2020), the second focuses on constructing an index system, based on the pioneering work of (Wilson et al., 2003).

The first category, in turn, can be subdivided into two subgroups. One group of indices adopts a broader definition of trade facilitation, such as the World Bank's Logistics Performance Index (LPI) (Jean-François et al., 2018), the World Bank Group's Doing Business (DB) index and its Trading Across Borders (TAB) indicators (World Bank, 2020), or the World Economic Forum's (WEF) Enabling Trade Index (ETI) (WEF, 2016). A second group relies on a narrow conception, all focused on implementing specific measures geared towards efficient management of border processes. Among them are mainly the OECD's Trade Facilitation Indicators (TFIs) (Moïse et al., 2011; Moïse & Sorescu, 2013) and the UN Global Survey on Trade Facilitation and Paperless Trade Implementation (GSTF-PTI) (United Nations, 2023).

Based on the research framework of (Wilson et al., 2003, 2005), a second approach evaluates trade facilitation by constructing an index system. The pioneering work of these authors considers four categories of indicators: customs environment, regulatory environment, port efficiency, and electronic-business usage or service sector infrastructure. Unlike the first category, the literature related to this approach (Portugal-Perez & Wilson, 2012; Sakyi et al., 2017; Shepherd & Wilson, 2009; Töngür et al., 2020; Yadav, 2014; Yushi & Borojo, 2019; J. Zhang & Wu, 2018) attempts to build a more complex measurement system encompassing a wide range of indicators and indices compiled from various sources (WEF's Global Competitiveness Report, World Bank's Doing Business, World Bank's Global Logistics Indicators Survey, World Development Indicators, OECD's Trade Facilitation Indicators, Transparency International, etc.).

Fig. 1: Comparaison of Trade Facilitation Indices

OECD's Trade Facilitations Indicators	United Nations Global Survey on Trade Facilitation and Paperless Trade	WEF's Enabling Trade Index	World Bank's Logistic Performance	World Bank's Trading Across Borders
Information availability	Transparency	Domestic market access	Customs	Time to export in hours (Documentary and border compliance)
Involvement of the trade community	Formalities	Foreign market access	Infrastructure	Cost to export in US$ (Documentary and border compliance)
Advance Rulings	Institutional Arrangement and Cooperation	Efficiency and transparency of border administration	International shipments	Time to import in hours (Documentary and border compliance)
Appeal Procedures	Paperless trade	Availability and quality of transport infrastructure	Logistics competence	Cost to import in US$ (Documentary and border compliance)
Fees and Charges	Cross- border Paperless trade	Availability and quality of transport services	Tracking and tracing	
Formalities		Availability and use of ICTs	Timeliness	
Cooperation		Operating environment		
Governance and Impartiality				

Source: *Authors*

For example, (Shepherd & Wilson, 2009) consider three dimensions in the trade facilitation index system: efficiency of maritime and air ports, the extent of irregular payments in relation to export/import licenses, and the level of competition among Internet Service Providers (a proxy for regulation of backbone services sectors). (Portugal-Perez & Wilson, 2012)

construct an index system that focuses on factors related to the "hard" or "soft" dimension of trade facilitation. They include four main indices (Information and communications technology, Physical infrastructure, Business environment, and Border and transport efficiency) calculated from 18 primary variables. Considering 35 African countries, (Sakyi et al., 2017) measure trade facilitation by focusing on the 'border and transport efficiency' channel, which captures the time, real costs, and regulatory burdens connected to the ease of trading across a country's border, as well as the level of transparency and efficiency of customs formalities and procedures. In another study covering 44 African countries, (Yushi & Borojo, 2019) construct a broader index system for the quality of economic institutions, border and transport efficiency, and physical and communication infrastructure.

Another growing body of literature attempts to assess the level of trade facilitation at the regional and provincial levels (Chaoyu, 2023; Cui et al., 2019; Huang, 2023; Zou, 2022). Researchers in this trend contribute to expanding the use of index systems at the territorial level, taking into account the specificities involved. For example, (Chaoyu, 2023) measures the level of trade facilitation in Zhejiang Province (China) by constructing an index system including five primary indicators: transportation, customs, regulation, finance, and information and technology. Similarly, based on the provincial perspective, (Zou, 2022) constructs and calculates China's provincial trade facilitation index based on four dimensions: marketability index, facilitation infrastructure, service capability, and development potential.

The allocation of weight in measurement systems is another point of heterogeneity that characterizes the construction of trade facilitation indices. According to the related literature, three main methods can be mentioned (Zou, 2022): principal component analysis, which extracts the main components through factor analysis (Portugal-Perez & Wilson, 2012; Sakyi et al., 2017; Yushi & Borojo, 2019), the arithmetic mean method assigning equal weight to all indicators (Shepherd & Wilson, 2009), and the hierarchical analysis method, which assigns values to different indicators to account for their heterogeneity (Chaoyu, 2023; J. Zhang & Wu, 2018).

III. DATA SOURCES AND METHODOLOGY

Different tools, methods, and approaches have been proposed to measure, monitor and evaluate projects, programs, and polices (Bamberger et al., 2004; Desplatz & Marc, 2016; Glewwe & Todd, 2022; Grun, 2006; Hunter, 2009; Khandker et al., 2009; Tengan et al., 2021).

One of the most well-known tools for monitoring and assessing trade facilitation reforms is performance indicators (Chauhan & Vijayakumar, 2021; CHEKROUNI & Mohamed, 2023), defined as "*measures of inputs, processes, outputs, outcomes, and impacts for development projects, programs, and strategies. When supported with sound data collection, indicators enable managers to track progress, demonstrate results, and take corrective action to improve service delivery*" (Bamberger et al., 2004, p. 6).

To achieve this objective, as outlined by (Glewwe & Todd, 2022), effective selection of performance indicators requires adherence to SMART criteria, which emphasizes Specificity, Measurability, Achievability, Relevance, and Time-boundedness. In our case, this method is appropriate for our research objective as it presents several advantages. First, it is an effective way to measure the achievement of set goals compared to the progress actually made. Second, it facilitates comparison across countries according to different areas of intervention and over time.

Given that our objective is to compare Morocco's performance with other similar countries, we opt for databases benchmarking countries' trade facilitation reforms, particularly the indices issued by international organizations. Considering the extensive number of indicators, our attention will be directed towards those most commonly employed in economic literature to assess the economic impact of trade facilitation reforms.

These include the Logistics Performance Index (LPI) from the World Bank (Jean-François et al., 2018), the Doing Business Trading Across Borders (TAB) indicators from the World Bank Group (World Bank, 2020), the Enabling Trade Index (ETI) from the World Economic Forum (WEF, 2016), the Trade Facilitation Indicators (TFIs) from the OECD (Moïse et al., 2011; Moïse & Sorescu, 2013), and the UN Global Survey on Trade Facilitation and Paperless Trade Implementation (GSTF-PTI) (United Nations, 2023).

However, it's important to note that these indicators have different primary goals. The examination of trade facilitation indicators and indices offers the possibility of classifying them according to their nature and scope, dividing them into four distinct segments (WEF, 2016). This classification is materialized by a cartographic representation used to position the various data collection approaches according to their degree of precision (whether primary data or transactional data, or subjective data based on perception and opinion), and their specific objective (whether political, environmental, outcome-related, or performance-related).

Similarly, it is crucial to distinguish between indicators that measure contributions to policies, such as the OECD's TFA or the GSTF-PTI, those that measure policy outcomes, such as the World Bank's TAB, and those that combine both approaches, like the LPI and the ETI (Peterson, 2017; WTO, 2015). Additionally, as discussed above, there is another important classification that focuses on how trade facilitation is conceptualized. The World Bank's LPI and TAB, as well as the WEF's ETI, take a broader view of trade facilitation. On the other hand, the TFA and GSTF-PTI have a more limited perspective, both centered on cross-border movement.

Despite these notable differences, these indicators can complement each other as they ultimately share the same purpose: reducing trade costs and boosting international trade. Therefore, as we take a comprehensive look at trade facilitation reforms, we will examine both the broad and narrow views of trade facilitation. We will consider both indicators that measure policy outcomes and those that measure contributions to policies. In order to facilitate the understanding of the utilities, complementarities and dissimilarities relating to these composite indicators, we summarize, in the table below, their main parameters and characteristics.

Table. 1 : Trade Facilitation Indicators for Benchmarking Analysis

Indicators	Agency	Frequency/ Coverage	Data Period	Score, Rank, or Both	Aggregation level	Scope and objectives
TFIs	OECD	Biennial 164 countries	2017 2019 2021	Score	National	Benchmarks the progress of countries in achieving customs reform under the TFA and monitors implementation TFA provisions concerning: Information availability, Involvement of the trade community, Advance Rulings, Appeal Procedures, Fees and Charges, Formalities, Cooperation and Governance and Impartiality.
TAB	World Bank	Annual 190 countries	2010 2020	Score and rank	National	Captures the average time and cost (excluding customs duties) incurred during the export and import logistics process, across three key areas: border compliance, documentary compliance, and domestic transport.
LPI	World Bank	Biennial 160 countries	2010 2018	Score and rank	National	Measures and rank countries trade environment using logistics performance based on six dimensions: customs, infrastructure, ease of arranging shipments, quality of logistics services, tracking and tracing, and timeliness.
ETI	WEF	Annual 136 countries	2010 2016	Score and rank	National	Encompassing a broader set of indicators than the World Bank's LPI, the ETI measures and ranks countries' trade facilitation capabilities across seven key pillars: domestic market access, foreign market access, efficiency and transparency of border administration, availability and quality of transport infrastructure, availability and quality of transport services, availability and use of ICTs and operating environment.
GSTF-PTI	United Nations	Biennial 143 countries	2019 2021 2023	Score and rank	National	comprises forty-seven questions designed to assess and benchmark five key areas related to trade facilitation and the adoption of paperless trade: Transparency, Formalities, Institutional Arrangement and Cooperation, paperless trade and cross-border paperless trade.

Source: *Authors*

With regard to spatiotemporal coverage, the analysis periods or comparison countries differ considerably from one indicator to another. Based on data availability, we selected the latest available years. The overall analysis period spans from 2010 to 2023, depending on whether the data is collected annually or biennially

To ensure consistent comparisons, we considered two main criteria when selecting benchmarks: geography and income level. The first compares Morocco to the MENA region and Sub-Saharan African countries. The Second compares Morocco's economic status, placing it in the lower-middle-income bracket according to the World Bank classification.

IV. Results and Discussion

We examine Morocco's performance as measured by five international composite indicators, produced by different agencies with varying periodicity. The five selected indicators pertain to the national level of aggregation.

1. Morocco's Performance Measured by Broad Trade Facilitation Indicators

In this first block of analysis, we focus on the broad trade facilitation indicators, namely the TAB, LPI, and ETI. A subsequent section will address the narrow trade facilitation indicators.

1.1. The World Bank Trading Across Borders Indicators

Given the broad data coverage, this first analysis will cover the period from 2010 to 2020, reflecting on a decade. For benchmarking purposes, we compare Morocco's situation with Africa and the MENA region by selecting seven African countries and seven MENA countries. The choice is justified by the fact that the overall DB ranking of these countries in the 2010 DB edition exceeded that of Morocco[1].

Over this analysis period, Morocco recorded a notable improvement in 2020 compared to 2018, rising from 65th to 58th place globally, representing an improvement of 7 places. In terms of the TAB score, Moroccan performance improved by 3.2 points, from 82.4 in 2019 to 85.6 in 2020, representing the fastest pace during the period. Over the past ten years, Morocco has progressed by 14 places to occupy the 58th global rank.

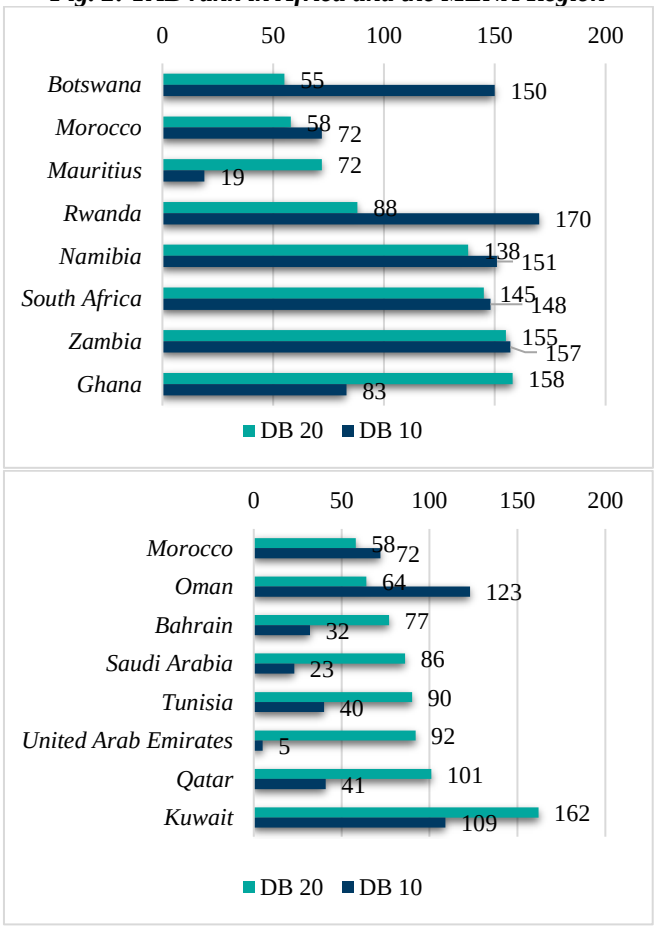
However, it is worth noting that since the 2016 edition of the DB, when a substantial modification was made to the methodology, Morocco's ranking was negatively impacted, with an exceptional and abnormal drop of more than 70 places (from 31st in 2015 to 102nd in 2016). Compared to the positive trend of the 2011-2015 period, significant simplification and dematerialization reforms and data corrections were deployed by the various administrations involved in the import and export process. These efforts contributed to restoring Morocco's ranking, which recorded a

[1] For African countries, these are Mauritius, South Africa, Botswana, Namibia, Rwanda, Zambia, and Ghana. Countries in the MENA region include Bahrain, Qatar, Kuwait, Oman, Saudi Arabia, Tunisia and the United Arab Emirates.

significant jump of 44 places between the 2016 and 2020 editions to reach 58th place, compared to 102nd place.

Regionally, according to the latest report edition, Morocco occupies the 4th place in Africa, behind Eswatini, Lesotho, and Botswana, and the 3rd place in the MENA region behind the Republic of Malta and the West Bank and Gaza. In North Africa, Morocco maintains its leadership ahead of Tunisia (90th rank), Egypt (171st), and Algeria (172nd).

Fig. 2: TAB rank in Africa and the MENA Region



Source: *Authors*

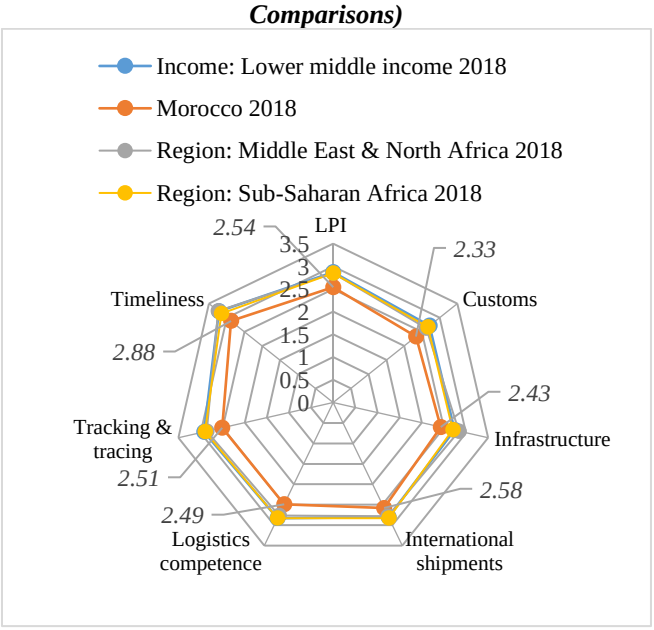
Among the MENA countries, Morocco outperforms all other comparison countries, including the United Arab Emirates (92nd), which leads the MENA region according to the Doing Business index (16th). With the exception of Morocco and Oman, which improved their ranking compared to 2010, the other countries in the region saw their ranking decline during the period under review. Regarding African comparison countries, Morocco maintained a good regional position by ranking 58th, behind Botswana (55th), despite methodological changes made to the TAB indicators in the 2012 and 2016 editions.

1.2. The World Bank's Logistics Performance Index

The latest available LPI edition for Morocco (2018) encompassed data from 160 countries, with surveys administered to 869 logistics professionals across 108 nations. Analyzing the 2010-2018 period reveals a concerning trend: unlike the TAB analysis, the LPI reflects a decline in the nation's trade facilitation performance. In the 2018 index, it ranked 109th out of 160 countries with a score of 2.54, representing a drop of 23 places and 0.33 points compared to its 2016 ranking (86th with a score of 2.67).

Within the MENA region, Morocco ranks 11th among Arab countries, trailing behind the United Arab Emirates (11th globally), Qatar (30th), Oman (43rd), Saudi Arabia (55th), Bahrain (59th), Kuwait (63rd), Egypt (67th), Lebanon (79th), Jordan (84th), and Tunisia (105th). Continentally, it holds the 18th position in Africa, lagging behind South Africa (33rd), Côte d'Ivoire (50th), and Rwanda (57th). This performance falls short of regional averages across the board. As shown in Figure 3, Morocco exhibits a lower performance than the MENA region, Sub-Saharan Africa, and lower-middle-income countries (LMICs) in all six LPI sub-indicators (customs, timeliness, tracking & tracing, infrastructure, logistics performance, and international shipments) and the overall LPI score (2.54). This translates to a significant gap compared to the regional averages (2.85 for both MENA and Sub-Saharan Africa, and 2.87 for LMICs).

Fig. 3: Morocco's LPI (Regional and Income-Based Comparisons)



Source: *Authors*

In this regard, the World Bank's 2018 report usefully aggregates international LPI results from four editions (2012, 2014, 2016, and 2018) in Annex 1. This aggregation minimizes random variations between surveys and facilitates comparisons across 167 countries. With an average score of 2.67, Morocco placed 87th out of 167 countries. Despite a decline in 2018, Morocco held the second position among North African countries, following Egypt (60th), and ahead of Tunisia (104th), Algeria (107th), Sudan (130th), and Libya (155th).

However, analyzing trade facilitation in Morocco based on this index should be done cautiously, despite the seemingly negative trend. First, the LPI does not reflect the scope of the TFA, in which trade facilitation is viewed from a narrow, not a broad, perspective. Indeed, the sub-component relating to customs clearance and border crossing efficiency, which is closely linked to the TFA framework, recorded an

improvement in 2018 compared to 2016 (2.33 compared to 2.22 previously), unlike the other components of the index.

Furthermore, despite being one of the most widely used data sources for identifying ways to simplify international trade, the LPI has several notable shortcomings (Arvis et al., 2018; ESCAP & OECD, 2017). The experience of international freight forwarders may not reflect the broader logistics environment of poor countries, which often rely on traditional and national operators. International and national operators may differ in their interaction with government agencies and the level of services they offer. Consequently, the LPI may reflect transit difficulties for landlocked countries and small island states (Beysenbaev & Dus, 2020). A low score for a landlocked country does not necessarily reflect its efforts to facilitate trade, which depend on the functioning of complex international transit systems.

Moreover, several studies have also noted that the results of the LPI survey raise some doubts about their reliability, with strong jumps in indicators for some countries such as Kazakhstan and Kyrgyzstan (Zhanarys et al., 2017), Ukraine (Kurochkin, 2013) which gained more than 50 places in 2 years, or the absence of rank movement for Russia despite logistical improvements made in that country (Zhanarys et al., 2017).

These doubts are supposedly attributable to the highly subjective nature of the LPI, which is more influenced by social factors than economic factors, due to a systematic cultural bias, as shown by (Guner & Coskun, 2012; Stepanova, 2022). These authors demonstrate a lack of correlation between country performance on the LPI and objective economic indicators. For instance, (Guner & Coskun, 2012) found no correlation with gross investment expenditure in transport infrastructure. Similarly, (Stepanova, 2022) observed no correlation with GDP or the Global Competitiveness Index (GCI), despite the expectation that such economic indicators would be associated with LPI scores.

To address the inherent subjectivity of the LPI, (Beysenbaev & Dus, 2020) developed the Integrated Logistics Performance Index (ILPI).

Table. 2: Comparing ILPI and IPL Scores for Morocco

	L'ILPI		**IPL 2018**	***Rank comparison***	
Country	***Score***	***Rank***	***Rank***		
Mauritania	0.42	121	134	*13*	↑
Mauritius	0.48	88	77	*-11*	↓
Mexico	0.52	64	50	*-14*	↓
Moldova	0.51	73	115	*42*	↑
Mongolia	0.46	98	129	*31*	↑
Montenegro	0.51	74	76	*2*	↑
Morocco	**0.48**	**90**	**108**	***18***	↑
Myanmar	0.39	133	136	*3*	↑
Nepal	0.42	124	113	*-11*	↓
Netherlands	0.81	3	6	*3*	↑
New Zealand	0.67	27	15	*-12*	↓
Niger	0.32	158	156	*-2*	↓

Source: *(Beysenbaev & Dus, 2020, p. 41), annexe A*

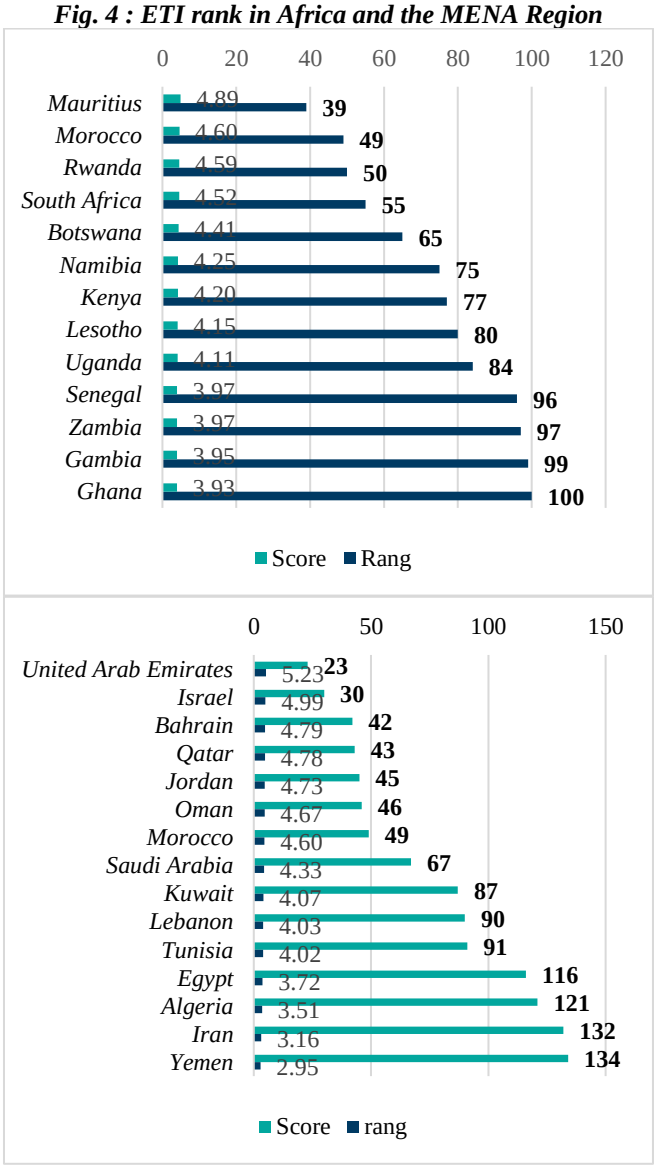
This enhanced index builds upon the World Bank's LPI framework but incorporates international statistical data to provide a more objective assessment of logistics systems and subsystems across 159 countries. The ILPI thus offers both a qualitative and quantitative perspective on logistics performance.

In contrast to the declining trend observed in Morocco's LPI score, the ILPI reveals a notable improvement in 2018. Morocco's ranking jumped 18 places, reflecting a significant enhancement in its logistics performance (table 2). This positive trend aligns with the findings of our analysis.

1.3. The World Economic Forum's Enabling Trade Index

Figure 4 depicts Morocco's performance on the ETI index from 2010 to 2016. Over this period, the Kingdom exhibited consistent improvement, ascending 26 positions from 75th to 49th globally (out of 136 nations). This positive trend is further highlighted by a 0.7 point increase in score (from 3.9 to 4.6) on the 7-point ETI scale (where 7 represents optimal performance).

Fig. 4 : ETI rank in Africa and the MENA Region



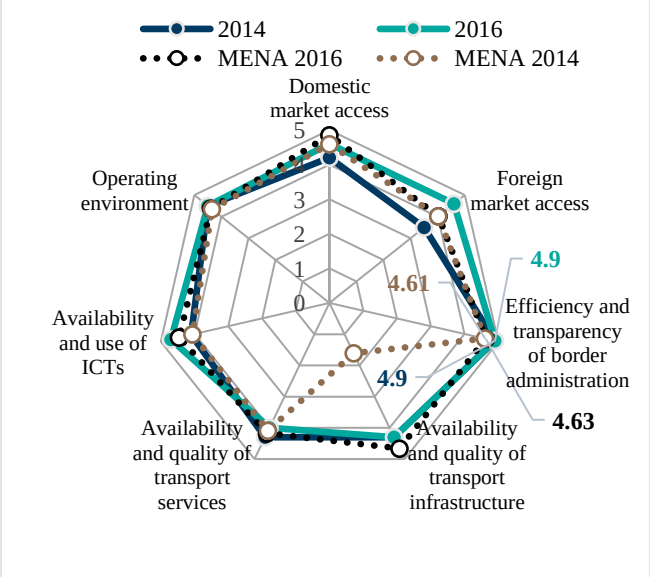
Source: *Authors*

Regionally, the nation occupied the second position in Africa and seventh in the MENA region. Its ETI ranking surpassed that of Algeria (121st), Iran (132nd), Tunisia (91st), and Egypt (116th) within the MENA region. However, several Arab nations, including the United Arab Emirates (23rd), Bahrain (42nd), Qatar (43rd), Jordan (45th), and Oman (46th), outperformed it. On the African continent, while Morocco ranked higher than Rwanda (50th), South Africa (55th), and Botswana (65th), it was surpassed by Mauritius, which occupied the top position in Africa and 39th globally.

To elucidate the factors contributing to Morocco's overall ETI performance, with particular emphasis on trade facilitation within the framework of the TFA, it is crucial to acknowledge the significant role that border administration plays in the index. While not the sole focus of the ETI, border administration is represented by 13 indicators. Notably, Pillar 3 encompasses several indicators that align with concepts addressed by the TFA. The constituent elements of this pillar are aggregated into sub-index B, which evaluates the quality, transparency, and efficiency of a nation's border administration, reflecting a narrow conception of trade facilitation.

By analyzing Morocco's scores for the four sub-indices comprising the ETI, it is evident that sub-index B consistently exhibited the strongest performance throughout the analyzed period. Specifically, Morocco's performance in border administration demonstrated a 0.7 point improvement, rising from 4.2 in 2010 to 4.9 in 2016. As depicted in Figure 5, a pillar-based analysis spanning 2014 to 2016 reveals a similar trend. This period was selected due to a 2014 methodological shift that rendered the 2010 and 2012 data incompatible, particularly at the pillar level. Consequently, Morocco's performance across the seven ETI pillars is compared with the average performance of the MENA region. Once again, Morocco demonstrates superior performance in the pillar related to border administration efficiency and transparency compared to the MENA regional average. Achieving a score of 4.9 in both 2014 and 2016, the kingdom exceeded the MENA regional averages of 4.61 and 4.63, respectively.

Fig. 5 : Morocco's Scores for ETI Sub-Indices



Source: *Authors*

Despite the insights derived from the aforementioned analysis, it is crucial to acknowledge the methodological limitations of using the ETI as a measure of trade facilitation. Similar to World Bank indicators, such as the LPI and TAB, the ETI presents several drawbacks (ESCAP & OECD, 2017). Specifically, the ETI's data timeliness fails to capture Morocco's recent efforts in trade facilitation. Furthermore, the index suffers from comparability issues, as evidenced by the lack of full comparability between the 2016 and 2014 results. An additional concern is that only 36% of the ETI comprises new data added to the WEF report. Significantly, 22 indicators, representing 36% of the ETI, are derived from the WEF's Executive Opinion Survey (EOS), which is inherently subjective.

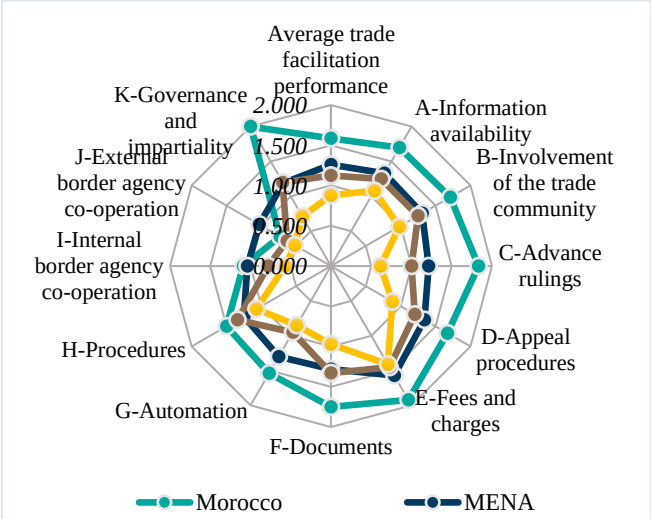
2. Morocco's Performance Measured by narrow Trade Facilitation Indicators

The methodological limitations of existing trade facilitation evaluation indicators necessitate the mobilization of more targeted and reliable measures within the framework of TFA. Two notable examples are the OECD's Trade Facilitation Indicators (TFIs) and the United Nations Regional Commissions' Global Survey on Trade Facilitation and the Implementation of Paperless Trade (GSTF-PTI).

2.1. The OECD's Trade Facilitation Indicators

Analyzing Morocco's performance across the eleven TFI sub-indicators from 2017-2022, using the most recent available data, reveals an overall improvement in trade facilitation. The average cumulative score increased by 0.18 points, rising from 1.41 in 2017 to 1.59 in 2022. Notably, these scores consistently exceed both the 2022 global average of 1.25 and the 2017 average of 1.06. At the sub-indicator level, Morocco demonstrated improvement in nine areas during this period: information availability, trader involvement, advance rulings, appeal procedures, fees and charges, formalities-documents, formalities-procedures, and internal-external cooperation. Conversely, a slight decline was observed in formalities-automation, while governance and impartiality remained stable.

Fig. 6: Morocco's TFIs (Regional and Income-Based Comparisons

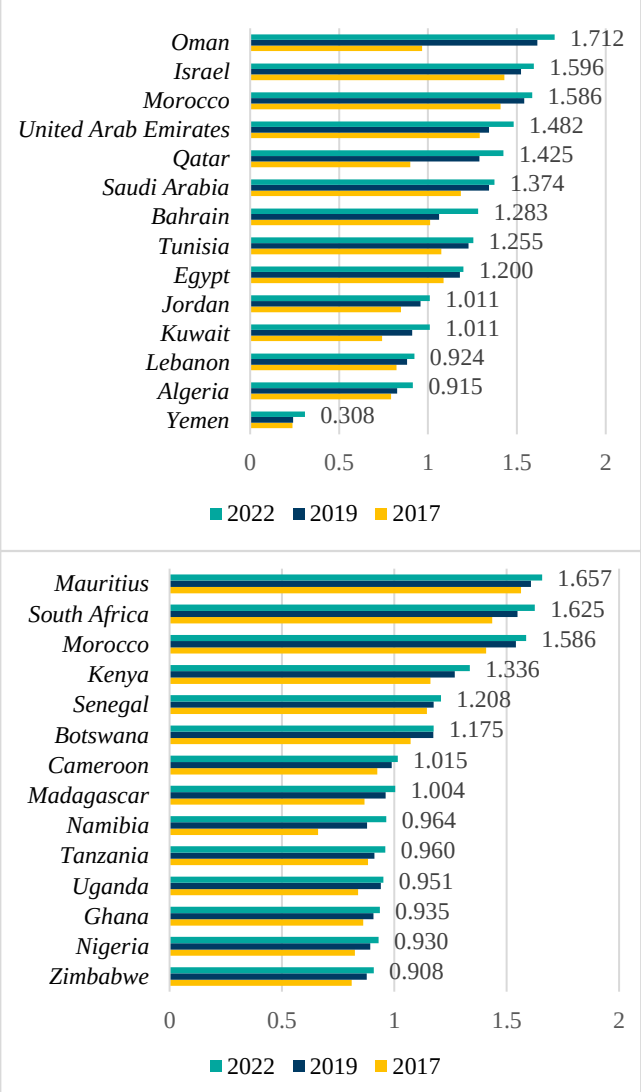


Source: *Authors*

For regional and income-Based comparisons, figure 6 provides a comparative analysis at both the regional level and within the lower-middle-income bracket to which Morocco belongs. Morocco exhibits superior performance in trade facilitation compared to the MENA regional average across numerous areas: information availability, trader involvement, advance rulings, appeal procedures, fees and charges, automation, documentation, procedures, internal cooperation, and governance and impartiality. However, external cooperation with neighboring and third countries emerges as a relative weakness. Furthermore, Morocco surpasses the average performance of both lower-middle-income countries and Sub-Saharan African countries across all eleven TFI sub-indicators.

As shown in Figure 7, based on the overall TFI score, Morocco ranks 3rd in Africa and among MENA countries, placing it among the top performers out of 164 countries.

Fig. 7 : Morocco's Average Trade Facilitation in Africa and the MENA Region



Source: *Authors*

Within the MENA region, the country surpasses all other countries except Oman (average score of 1.712), including its North African neighbors (Tunisia, Egypt, and Algeria). Similarly, in the African continent, the kingdom outperforms all others in the sample except for Mauritius and South Africa, which achieved scores of 1.657 and 1.625, respectively.

In sum, the comparative analysis reveals a consistent improvement in Morocco's trade facilitation performance across all criteria (temporal, geographical, and income-based). The recorded OECD TFI scores align with anecdotal evidence regarding trade facilitation enhancements, as well as other performance indicators examined in this analysis. Moreover, the robust methodological process employed by the OECD effectively addresses inconsistencies observed in prior assessments of trade facilitation performance. Consequently, the resulting TFI indicator data offers a more accurate and consistent evaluation, reflecting improvements observed across various performance metrics.

However, despite Morocco's positive regional trend, demonstrating its commitment to implementing the TFA provisions, an in-depth analysis of the sub-indicators reveals both achievements and areas for improvement. To further understand these potential delays, the table below compares Morocco's scores across the eleven sub-indicators with the top performers of 2022: Oman for the MENA region, Mauritius for Africa, and Hong Kong, China, for the world. This comparison highlights specific areas where efforts can be focused to enhance trade facilitation further.

Table. 3: Morocco's TFIs vs. Top Performers (MENA, Africa, and World)

Indicator	Morocco	Top performances (MENA, Africa, World)		
		Oman	Mauritius	Hong Kong, China
Average trade facilitation performance	1.586	1.712	1.657	1.879
A-Information availability	1.700	1.670	1.860	2
B-Involvement of the trade community	1.710	1.750	1.500	1.880
C-Advance rulings	1.833	1.571	1.600	2
D-Appeal procedures	1.670	1.640	1.620	1.770
E-Fees and charges	1.920	1.850	1.710	1.860
F-Documents	1.750	1.780	1.780	2
G-Automation	1.540	1.920	1.850	2
H-Procedures	1.500	1.680	1.700	1.800
I-Internal border agency co-operation	1.090	1.550	1.360	1.820
J-External border agency co-operation	0.730	1.550	1.360	1.55
K-Governance and impartiality	2	1.890	1.890	2

Source : *Authors*

As demonstrated in Table 3, analyzing Morocco's relative performance reveals significant disparities between TFIs. While Morocco achieves or approaches optimal performance (score of 2) in areas like advance rulings, governance and impartiality, and fees and charges, even surpassing Oman and Mauritius, other areas exhibit substantial lags (over 0.5 points) compared to top performers. This is particularly evident for indicators related to internal and external cooperation, where effective implementation remains elusive. External cooperation has not even reached an intermediate stage (score of 1). As a result, the weak performance in these areas significantly impacts Morocco's overall score compared to top-performing countries.

The remaining indicators, exhibiting intermediate performance (scores between 1 and 2), signifying partial or ongoing implementation, can be categorized into two groups. The first group, encompassing formalities (documents, procedures, and automation), displays moderate to significant gaps (0.25 to 0.5 points) compared to top performers. The second group, including trader involvement and information availability, demonstrates performance nearing that of top performers (gaps less than 0.25 points). Ultimately, improving Morocco's trade facilitation performance hinges on future efforts in areas where optimal performance remains unrealized. These areas, representing opportunities for progress, primarily encompass internal and external cooperation, and secondarily, formalities (documents, procedures, and automation), trader involvement, and appeal procedures. For areas demonstrating strong performance, the focus should shift to maintaining these achievements.

2.2. The United Nations Regional Commissions' Global Survey on Trade Facilitation and Paperless Trade Implementation

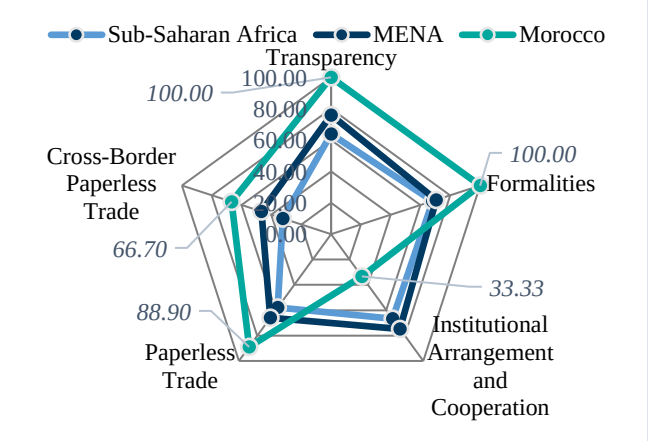
Concluding our analysis with the GSTF-PTI survey, we observe a positive trend in Morocco's trade facilitation between 2019 and 2023. Government initiatives like simplified customs procedures and digitization are reflected in strong performance, particularly in paperless trade (89%) and formalities and transparency (100%). Notably, the GSTF-PTI aligns closely with OECD TFIs in scope and data points. According to OECD TFIs, Morocco's composite score rose from 1.41 in 2017 to 1.59 in 2022. Similarly, the GSTF-PTI shows improvement, from 80.65% in 2019 to 83.87% in 2023.

To accurately measure trade facilitation performance, specifically in relation to the Trade Facilitation Agreement (TFA), we selected 23 out of 58 indicators directly related to the TFA. These indicators can be grouped into five sub-categories: (1) transparency; (2) documentation and procedural formalities; (3) automation; (4) cooperation and institutional arrangements; and (5) cross-border paperless trade.

While Morocco demonstrates strong performance (score of 3) in transparency, formalities, and automation, there's a lag in cooperation and institutional arrangements which are comparable to the "internal and external border agency cooperation" of OECD TFIs. This weakness, mirroring the OECD TFI assessment, should be addressed in future reforms. Improvements are evident in "information availability," "trader involvement," "advance rulings," and "appeal procedures," all aligning with the GSTF-PTI's "transparency" indicator. Similarly, "formalities (documents, procedures, fees)," "Paperless Trade," and "Cross-Border Paperless Trade" show progress, aligning with GSTF-PTI's "formalities" and "automation" indicators. However, "internal and external border agency cooperation," corresponding to GSTF-PTI's "cooperation and institutional arrangements," show weaker performance.

An analysis of Morocco's average regional position among MENA and Sub-Saharan African countries (Figure 8) confirms this observation. In 2023, the country significantly outperforms regional averages in transparency, documentation and procedural formalities, and automation. However, a notable gap exists in internal border agency cooperation, with Morocco at 33.33% compared to 74.81% for MENA and 66.67% for Sub-Saharan Africa.

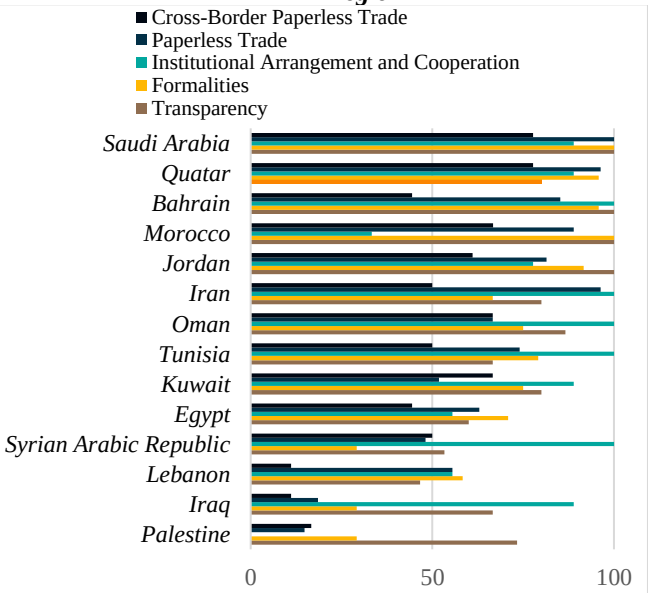
Fig. 8: Benchmarking Morocco's GSTF-PTI (MENA & Sub-Saharan Africa)



Source: *Authors*

As illustrated in Figure 9, Morocco's strong performance places it third among MENA countries, alongside Bahrain, with an average GSTF-PTI score of 78%. This positions them behind Saudi Arabia (88%) and Qatar (83%).

Fig. 9: Average Implementation Rates of GSTF-PTI in the MENA Region

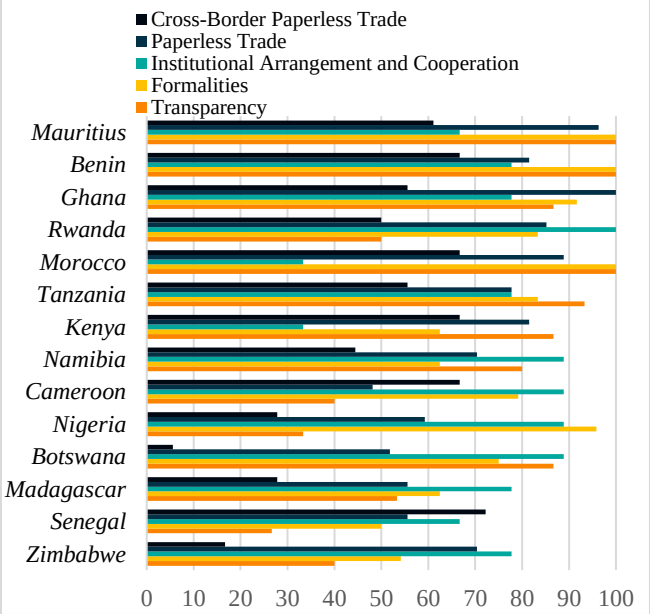


Source: *Authors*

However, despite this relatively advanced standing, Morocco's performance is hampered by weakness in cooperation and institutional arrangements (33.33%), falling short of the regional average (74.81%), unlike its performance in other sub-indicators.

In terms of continental positioning, Morocco secures the fifth position with a score of 78% (Figure 10). This ranking places the nation behind Mauritius (80.65%), Benin (84.65%), Ghana (86.02%), and Rwanda (88.17%), all of which boast higher average GSTF-PTI scores.

Fig. 10: Average Implementation Rates of GSTF-PTI in Sub-Saharan Africa



Source: *Authors*

Again, Morocco's ranking is negatively impacted by its low score (33.33%) in cooperation and institutional arrangements. Unlike its performance in other sub-indicators, the kingdom falls short of the regional average (66.67%) in this crucial area.

V. Conclusion and Policy Implications

This research examined Morocco's international and regional position in trade facilitation, comparing its performance to countries in the MENA region, sub-Saharan Africa, and the Lower-Middle Income group. Utilizing a comprehensive set of composite indicators, the analysis considered both policy contributions and outcomes, differentiating between broad and narrow conceptions of trade facilitation.

The analysis reveals a nuanced picture of Morocco's trade facilitation performance. An assessment of policy outcomes over the past decade suggests a favorable regional positioning for Morocco. Specifically, the TAB indicators underscore notable efforts to reduce trade times and costs, particularly in areas of border and documentary compliance. However, the LPI and ETI offer a more qualified perspective, highlighting shortcomings not fully captured by the TAB indicators. The integration of refined measures, such as the ILPI and sub-indices specific to narrower conceptions of trade facilitation, provides a more comprehensive and nuanced understanding of the ground realities.

Shifting the focus to indicators measuring policy contributions, the analysis reveals positive trends at the regional level (Africa and MENA). However, a granular examination of sub-indicators related to TFIs and the GSTF-PTI exposes disparities across various domains. Morocco exhibits commendable performance in TFIs pertaining to advance rulings, governance and impartiality, and fees and charges, attaining or approaching best practice benchmarks. Conversely, other areas, notably internal and external cooperation, exhibit significant lags and deviations from top performers, having not yet reached the stage of effective implementation, nor attained an intermediate level of progress. Indicators encompassing formalities, trader involvement, and appeal procedures demonstrate intermediate performance levels. These findings are largely corroborated by the assessment based on the GSTF-PTI, where measures related to transparency and formalities exhibit notable improvement, while those concerning "cooperation and institutional arrangements" reveal persistent weaknesses that warrant attention in forthcoming reforms.

Future progress hinges on prioritizing reforms in underperforming areas, representing opportunities for improvement. The recently established " *Commission Nationale de Coordination pour la Facilitation des Procédures du Commerce Extérieur* " presents a significant opportunity to address these weaknesses, particularly within its remit of cooperation and institutional arrangements.

This study acknowledges potential methodological limitations due to inconsistencies arising from methodological variations and the scope of measures considered by the composite indicators. This underscores the crucial need for selecting appropriate indicators in future empirical work. A natural progression entails employing these indicators within quantitative studies supported by robust econometric models to enhance the conclusions' empirical grounding. Further research extending to countries similar to Morocco can validate the indicators' relevance and explore the construction of a trade facilitation index system tailored to the Moroccan context.

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