



Research Article

The Role of Rules of Origin in Utilizing Preferential Tariff Benefits for the Agricultural Sector in International Trade Agreements

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ARTICLE INFO

Article history:

Date of submission: 28 February 2026

Date of revise: 17 June 2026

Date of acceptance: 26 June 2026

JEL Classification:

F13, F14, F51, F53, K33.

Keywords:

Rules of origin, Trade Agreements, Preferential Tariffs, Market Access.

ABSTRACT

International trade is a key driver of contemporary economic development, and the effective implementation of trade agreements is essential for maximizing national benefits. Among the critical mechanisms in preferential trade agreements are the rules of Origin (ROO), which determines whether exported goods qualify for reduced or zero tariffs. This study investigates the role of ROO and evaluates the extent to which agricultural exporters benefit from preferential tariff advantages in selected markets. The research combines documentary and library analysis with a field survey. Data were collected in 2025 using 200 researcher-designed questionnaires completed with the cooperation of the Iran Chamber of Commerce and its provincial branches. The target population included agricultural exporters to the Eurasian, Turkish, and Pakistani markets. Findings indicate that only 20.5% of exporters utilized preferential tariffs through certificates of origin (COO). Approximately 79% identified limited awareness, insufficient information dissemination, administrative bureaucracy, and time-consuming procedures as major barriers. Statistical analysis revealed significant relationships between awareness and gender, as well as between benefit utilization and educational level. Exporters trading in the Eurasian market reported higher satisfaction than those targeting other markets. The study concludes that expanding targeted training programs and improving information systems—especially regarding certificate issuance—are effective strategies to enhance utilization of ROO. Accordingly, it is recommended that the Trade Promotion Organization of Iran, in collaboration with the Iran Chamber of Commerce and its provincial branches, organize short-term, practical workshops for stakeholders. These initiatives would facilitate access to preferential export markets and maximize the benefits derived from ROO.

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DOI: <https://doi.org/10.48308/jep.2026.243770.1267>



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1. Introduction

*I*n today's world, international trade serves as a pivotal driver of economic development for nations. For this reason, utilizing international trade agreements in global commerce has significant importance. In recent decades, international trade agreements have expanded dramatically. According to the International Trade Center (ITC), the number of such agreements worldwide increased from 75 in 1990 to 557 in 2025 (ITC Trade Agreement Database, 2025). Most of these agreements conclude in the form of Free Trade Agreements (FTAs), Customs Unions, and Preferential Trade Agreements (PTAs). International trade agreements offer opportunities to benefit from international economic relations by reducing the costs of accessing target markets. When implementing market access levels, despite the existence of trade agreements for determining preferential tariffs, several critical factors must be considered. If overlooked, these can render the implementation of such agreements ineffective. One of the most crucial of these factors is the "rules of origin".

ROO covers the key technical and legal elements of benefiting from the tariff preferences of these agreements. These rules determine whether an imported product qualifies for tariff preferences or other benefits under the trade agreement. In international trade, ROO, as a system for identifying the economic nationality of goods, is recognized as one of the most fundamental rules and components. These rules not only facilitate and clarify the conditions for benefiting from preferential tariffs in target export markets but also significantly boost exports and stimulate domestic production. Determining the origin of products and goods requires a complete and accurate understanding of the criteria governing ROO and their correct application (Feyzi Chakab & Raja, 2024). The importance of ROO is so high that the World Trade Organization (WTO) has established a Technical Committee on ROO under its auspices. In Iran's Customs Affairs Law, recognizing the special importance of ROO within the WTO framework and international

trade practices, an independent chapter has been dedicated to ROO. Article 17 of the Iranian Customs Law defines the country of origin and the ROO.

Attention to ROO aims to prevent re-exportation under normal trading conditions. What further underscores the importance of this subject is the complexity of the calculation formulas used to determine origin. However, beyond the legal framework, the traders' own awareness and expertise in this field are absolutely critical for success. Clarifying this issue, along with identifying associated challenges and calculation formulas, can enhance market access and facilitate trade implementation under these agreements. With countries worldwide focusing on expanding markets and increasing their market share, addressing this issue has become an absolute necessity.

The main objective of the present study is to examine the role of ROO in the use of trade agreement privileges. To achieve this, the ROO framework was explained, and perspectives regarding enhanced market access and the more efficient use of preferential tariffs under relevant agreements were gathered from exporters and business operators. The study's questionnaire was designed based on these principles and perspectives.

2. Theoretical Literature and Research Background

2-1. Rules of Origin and Theories of International Trade

Although ROO may appear to be purely technical and customs-related instruments, from the perspective of international trade theories, they play a significant role in shaping trade patterns, resource allocation, and the orientation of production chains. By influencing transaction costs and the manner in which preferential tariffs are utilized, these rules are linked to both classical and modern theories of international trade (Krugman et al., 2018; WTO, 2011). Reports by the WTO indicate ROO can either strengthen or weaken the tariff-reduction effects of preferential trade agreements, and from this perspective, their role extends beyond that of a mere implementation tool (WTO, 2011).

Rules of Origin, Trade Creation, and Trade Diversion

According to Viner's classical analysis (1950), trade agreements affect economic welfare through two mechanisms: "trade creation" and "trade diversion". Trade creation occurs when imports from member countries replace more expensive domestic production, whereas trade diversion refers to replacing lower-cost imports from non-member countries with higher-cost imports from member countries (Viner, 1950; Krugman et al., 2018). Within this framework, ROO, by preventing the entry of goods from non-member countries through member countries, can potentially reduce trade diversion. However, studies indicate that stringent ROO can themselves lead to trade diversion and reduce the efficiency of resource allocation by forcing firms to use costly regional inputs (Baldwin, 2006; Cadot et al., 2006).

Rules of Origin as Non-Tariff Trade Costs

In the international trade literature, ROO is often viewed as a form of hidden non-tariff trade cost. Implementing these rules requires detailed documentation of the production process, calculation of value added, and the provision of COO, which impose high administrative and compliance costs on firms (WTO, 2011). Empirical studies indicate that these costs, particularly for small and medium-sized enterprises, can be high enough to neutralize the tariff advantage provided by preferential trade agreements effectively. Therefore, ROO can represent a serious barrier to trade expansion, even under zero-tariff conditions (Estevadeordal & Suominen, 2006; Cadot et al., 2006).

Rules of Origin and Regional and Global Value Chains

With the expansion of global value chains (GVCs), production is divided into multiple stages. In such a structure, ROO plays a decisive role in determining a country's ability to participate in value chains, as they define the extent to which the use of imported inputs is compatible with the enjoyment of preferential tariffs (Baldwin, 2012). Flexible ROO, particularly those permitting cumulation or aggregation of origin, can facilitate firm participation in regional value

chains. Conversely, restrictive rules may prevent firms from using efficient global inputs and weaken their integration into global value chains (OECD & WTO, 2013; Gereffi et al., 2005).

In general, ROO lies at the intersection of three main theoretical streams in international trade: the theory of trade creation and diversion, the literature on non-tariff trade costs, and the global value chain approach. Theoretical and empirical evidence suggest that poorly designed ROO can limit the welfare effects of trade agreements and weaken countries' integration into the global economy, whereas well-designed and flexible rules can enhance trade and industrial efficiency (WTO, 2011; Baldwin, 2012).

2.2. The Concept of Rules of Origin and Their Legal Framework

Determining the country of origin of a product is particularly challenging when raw materials and components are moved globally and processed in different factories. Specifically, ROO refers to the criteria that determine the country of origin for a given product. These rules play a crucial role in implementing international trade policies. They are especially important for determining eligibility for trade preferences (preferential ROO), applying quotas, enforcing anti-dumping measures, and setting countervailing duties (non-preferential ROO) (WTO, 2024). From a legal perspective, ROO is primarily governed at the international level by the WTO Agreement on ROO (ARO). According to Article 1 of this agreement, ROO is defined as "*the laws, regulations, and general administrative determinations applied by any WTO Member to determine the country of origin of goods.*" These rules must be implemented in a transparent, consistent, and equitable manner and must not be used as a tool for hidden trade policy measures (WTO, Articles 1 and 5, Agreement on ROO).

The need to establish ROO stems from the fact that the implementation of trade policy measures, such as tariffs, quotas, and trade remedies, often depends on the country of origin of the relevant product. In fact, ROO has become a significant challenge in international trade. This is not only because they represent a highly technical area of legislation, but also because their determination and application lack global harmonization (Akira, 2006).

According to the definition of ROO, the WTO classifies ROO into two categories:

1. Non-Preferential Rules of Origin: Non-preferential ROOs are rules applied in the absence of any trade preferences—that is, when trade is conducted under the Most-Favored-Nation (MFN) principle. Not all countries implement specific regulations regarding non-preferential ROO. However, certain trade policy measures, such as quotas, anti-dumping duties, or “Made in” labeling requirements, may necessitate determining the origin of goods and, therefore, applying non-preferential ROO (WTO, 2024). ROO is usually based on the Revised Kyoto Convention and adheres to the principles and standards of the WTO Agreement on ROO (ARO) (ITC, 2025).

2. Preferential Rules of Origin: This category of rules is related to trade agreements. Such agreements can be unilateral (offered by one party to another) or bilateral/mutual (negotiated and agreed upon by both parties) (ITC, 2025).

Therefore, a conceptual model regarding ROO, in the two scenarios of the presence or absence of a preferential trade agreement, can be illustrated in the diagram below.

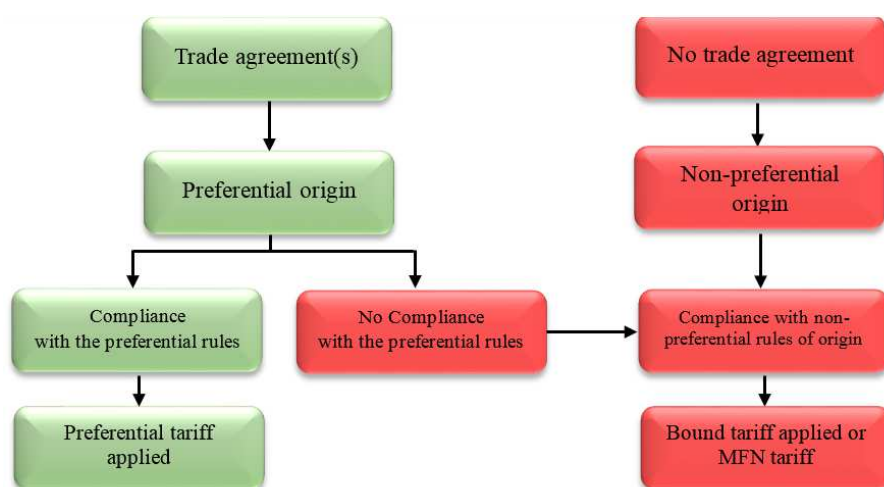


Fig 1. How to Benefit from Preferential Tariffs in Trade Agreements

Source: Research findings

Figure 1 illustrates that in the presence of a trade agreement, compliance with ROO enables traders to benefit from preferential tariffs; otherwise, due to non-compliance with origin rules or the absence of a trade agreement, the bound (ceiling) tariff or the MFN tariff will be applied. Figure 2 further depicts the differences between these tariff types.

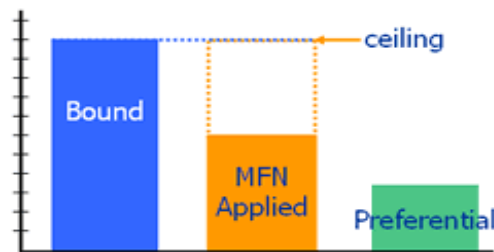


Fig 2. Types of Tariffs

Source: Research findings

It should be noted that to establish preferential origin and apply the preferential tariffs, the exporter must answer “yes” to all five questions shown in Diagram 1; otherwise, the goods must be subject to the MFN tariff.

1. Agreement	•Is there a trade agreement between the country of export and import?
2. Product	•Is there a preferential tariff rate for the product under the agreement?
3. Rule	•Does the product comply with the ROO under the agreement?
4. Compliance	•Can the exporter comply with all origin provisions and conditions?
5. Proof	•Can the exporter prove the origin of the product?

Diagram 1. Preferential origin qualifying process

Source: Research findings

Based on the classification of ROO, a certificate of origin is issued. A COO is an official commercial document issued in Iran by the Chamber of Commerce in accordance with the law, indicating the country in which the goods were produced, processed, or assembled. This document is typically presented along with other commercial documents, including the invoice and the bill of lading (BL). It is considered one of the most important documents for customs clearance from a legal and customs perspective. It is also essential for benefiting from trade advantages under trade agreements, such as tariff reductions or trade exemptions. Therefore, Iranian exporters, importers, and international shipping companies require this certificate as part of the shipping documentation and to prove the nationality of the goods being traded (Khosh-Sokhbat, 2025). Similar to ROO, COO is generally classified into two categories—preferential and non-preferential—depending on the type of trade agreements between countries. A brief explanation of each category is provided below:

Non-Preferential COO: This certificate solely indicates the country of production of the goods and is used in regular trade. Preferential COO: This certificate is important for exports to countries that have economic or regional cooperation agreements with Iran. Under this type of certificate, goods that comply with the provisions of trade agreements between countries can benefit from tariff reductions or customs exemptions.

Studies show that in practice, COO is issued in various forms. Among these are regional and special COO. The regional COO is specific to regional agreements, such as the ECO. In addition to the country of origin, the regional production conditions of the goods are also considered. The special COO is required by certain countries or for specific goods that need special forms of the certificate. The CT3 certificate is issued for goods covered by preferential agreements with the member countries of the Eurasian Economic Union (EAEU). Iranian exporters must obtain this certificate through the Chamber of Commerce and authorized organizations and present it along with the shipping documents (Khosh-Sokhbat, 2025).

-Issuing Authority of Certificates of Origin in Iran

According to the note to Article 17 of the Iranian Customs Affairs Law (2011), the only legal authority for issuing COO in Iran is the Iran Chamber of Commerce (Customs Affairs Law, 2011). After verifying the authenticity of commercial documents, such as invoices and bills of lading, and matching the product information with the declared specifications, the Chamber of Commerce issues an official COO with a valid seal and signature. Once issued, the COO must be submitted to the Customs Administration of the Islamic Republic of Iran, accompanied by other shipping documents. Based on this certificate, customs apply the appropriate import/export tariffs, preferential rates, or exemptions, and verify the authenticity of the country of production (Khosh-Sokhbat, 2025).

The COO issued by the Iran Chamber of Commerce is recognized as valid in most countries worldwide due to Iran's membership in international trade organizations and commercial conventions.

At present, some stages of the issuance process in Iran are also being implemented electronically. Nevertheless, in many cases, in-person visits for submitting documents or receiving the certificate are still mandatory, and exporters must ensure the correct completion of each stage ahead of time (Hamrah, 2025).

- Regulations Governing the Determination of Origin (of Goods)

The general requirements for the determination of origin, originating goods, and origin criteria are classified as follows:

1- Wholly Obtain or Produce Goods:

A wholly obtained or produced good is an origin criterion that must be met to determine the country of origin of goods within preferential trade relations. This criterion is mainly applicable to natural products and goods derived from natural products and includes products that are entirely obtained or produced in a single country or region. Examples include products extracted or harvested in a country (agricultural products such as apples and oranges, or

non-agricultural products such as gold bullion), as well as live animals that have been born, raised, or hunted in that country. (WCO, 2017).

2- Substantial Transformation / Sufficient Working or Processing:

The determination of the origin of manufactured goods is carried out based on a set of specific production requirements, as well as to ensure that a defined portion of the production process occurs within the preferential tariff area. This is intended to prevent minor or insufficient processing that would not justify granting preferential origin to the goods. Goods are considered to have preferential origin if, firstly, they are wholly obtained or produced within the free trade area, meaning that only one country or region is involved in the production of the goods. Secondly, they must undergo substantial transformation or meet the requirements of the Product-Specific Rules (PSRs) within the free trade area. This situation arises when production involves inputs or factors from more than one country. Substantial transformation is a production requirement that ensures a meaningful manufacturing process has occurred within the free trade area for a good to be granted preferential origin status. According to the Kyoto Convention (1974)¹, when two or more countries participate in the production of a good, the origin of the good must be determined based on the criterion of substantial transformation. According to the Convention, in practice, the criterion of substantial transformation or significant change is expressed in one of the following three ways (WCO, 2017):

a. Change in Tariff Heading:

To clarify the subject and enable trade stakeholders to benefit from the ROO, and given the importance of this topic, the most relevant regulations regarding changes in tariff classification, based on their general principles, are highlighted (ITC).

1. The Kyoto Convention of 1974, known as the International Convention on the Simplification and Harmonization of Customs Procedures, is the original version of the convention that was later revised in 1999 and published as the Revised Kyoto Convention (RKC).

- Cumulation

A provision which allows to consider goods obtained in as well as processing taking place in one FTA member country as originating in another.

- Packaging

A provision that clarifies whether packaging should be accounted for when determining the origin of the product (WCO, 2017).

- De Minimis

A provision that allows a small amount or negligible quantity of non-originating materials to be used in the production of the good without affecting its originating status. This rule is considered a tolerance (or de minimis) provision within the ROO.

- Non-qualifying Operations

A provision that lists operations that do not confer origin. They are considered below the threshold of sufficient production/processing.

- Accessories, Spare Parts, and Tools:

A provision that clarifies the origin determination process of accessories, spare parts or tools delivered with the good (WCO, 2017).

- b. Technical Requirements:

One of the other important criteria within the general principles of substantial transformation of goods or products is the concept of technical requirements or specific criteria. This concept relates to particular manufacturing or processing operations applied to a product, irrespective of tariff classification or changes in value added. Examples include the pasteurization of milk, as well as certain operations in the textile and apparel industry, which are widely observed in practice.

- c- ad valorem provision (Value-added Rule):

Under this rule, either the percentage value of the materials used or the percentage of the value added must reach a specified level for the origin of the good to be determined.

The ITC highlights Table 1 by as a guideline for determining this criterion in the trade process.

Table 1. 14 Types of Rules of Origin

Occurrence*	Rule	Definition
6%	WO	Good is entirely (i.e., wholly) obtained or manufactured in one country without using any non-originating materials.
5%	NC	The non-originating inputs are not required to be classified in a different HS code than the final good to confer originating status.
7%	CC	The originating status is conferred to a good that is classified in a different HS chapter than the non-originating inputs.
43%	CTH	The originating status is conferred to a good that is classified in a different HS heading than the non-originating inputs.
6%	CTSH	The originating status is conferred to a good that is classified in a different HS subheading than the non-originating inputs.
0%	CTI	The originating status is conferred to a good that is classified in a different HS tariff item than the non-originating inputs.
10%	ALW	The originating status is allowed to be conferred from non-originating inputs of specific HS codes.
10%	ECT	The originating status cannot be conferred to a good if the non-originating inputs are from HS codes listed under the exception.
13%	SP	A good originates in the country where a defined technical requirement, i.e., a specific working or processing, has been carried out.
61%	RVC	A good obtains originating status if a defined regional value content percentage has been reached.
0.1%	RQC	A good obtains originating status if a defined regional quantity content percentage has been reached.
3%	RVP	A good obtains originating status if a defined regional value content percentage on a part or parts has been reached.
0%	RQP	A good obtains originating status if a defined regional quantity content percentage on a part or parts has been reached.
2%	Other	Origin criteria other than related to wholly obtained, CTC, value (quantity) content, or specified process.

* Note: "Occurrence" means % of presence of the rule among all 500,000 FTA x HS6 combinations (as of Oct 12, 2018)

Source: ITC (2025)

As previously stated, the value-added rule is one of the other important criteria within the general principles of substantial transformation of goods or products. Regional Value Content (RVC) can be calculated using four methods; however, according to the World Customs Organization¹ (2017), trade agreements most commonly apply the following two methods. In this regard, and to enable the proper and effective use of these rules by relevant stakeholders, the two calculation methods for the value-added rule—namely the Build-Up (direct) method and the Build-Down (indirect) method—are presented below.

- Build-Up (direct) method

This method is based on the value of originating materials (VOM) and represents the minimum threshold required for determining the region (origin). The calculation formula is as follows:

$$RVC = \frac{VOM}{\text{Value of the Good}} \times 100\% \quad (1)$$

Under this method, the calculation formula, as applied, for example, in the Association of Southeast Asian Nations (ASEAN) region, is as follows:

$$RVC = \frac{\text{ASEAN Material Cost} + \text{Direct Labour Cost} + \text{Direct Overhead Cost} + \text{Other cost} + \text{Profit}}{\text{FOB Price}} \times 100\%$$

- Build-Down Method (Indirect Method):

This method is based on the value of non-originating materials (VNM), including materials of unknown origin used in the production of the good. It represents the maximum allowable threshold for determining the region (origin). The calculation formula is as follows:

$$RVC = \frac{\text{Value of the Good} - \text{VNM}}{\text{Value of the Good}} \times 100\% \quad (2)$$

Under this method, the calculation formula, as applied, for example, in the Association of Southeast Asian Nations (ASEAN) region, is as follows:

$$RVC = \frac{\text{FOB Price} - \text{value of Non Originating Materials, Parts or Goods}}{\text{FOB Price}} \times 100\%$$

1. WCO

It is noteworthy that there are also regulations in this regard that must be considered within the value-added rule when applying ROO. Some of these regulations are briefly outlined below:

- Value-added calculation

A provision that provides how to calculate regional value content in the shipped goods.

- Cumulation

A provision which allows to consider goods obtained in as well as processing taking place in one FTA member country as originating in another.

- Absorption or Roll-Up

The roll-up principle allows intermediate products to retain their origin status when used in subsequent production operations. Under this principle, the non-originating inputs contained in the intermediate product are disregarded when assessing the origin of the final good. This means that even if a material contains non-originating input(s), as long as it meets the relevant origin criteria and acquires originating status, the entire material is treated originating when evaluating the final product (WCO, 2017).

- Indirect Material

This provision states that the origin of certain materials, known as indirect or neutral inputs (such as energy, fuel, tools, machinery, and equipment used in production), is disregarded when determining the origin of the final product.

- Non-qualifying Operations:

A provision that lists operations that do not confer origin. They are considered below the threshold of sufficient production/processing.

2-3. A Brief Overview of Rules of Origin in the Iran–Turkey, Iran–Eurasia, and Iran–Pakistan Agreements

– Iran–Eurasia Agreement

An examination of the Iran–Eurasia Agreement indicates that the ROO under this agreement is based on a combination of tariff-shift criteria, minimum value-added requirements, and, for certain products, specific production

processes (SPRs), reflecting a structure aligned with international standards (EAEU & Iran, 2018; WCO, n.d.). A minimal operations list is also provided to prevent circumvention of tariff preferences (WTO, 2011). Importantly, despite the relative transparency of the rules, administrative complexities and the costs associated with obtaining COO—particularly for small and medium-sized enterprises—significantly limit the effective utilization of these preferences (Cadot et al., 2006; OECD & WTO, 2013).

- Iran–Pakistan Agreement

In the Iran–Pakistan Preferential Trade Agreement (PTA), the ROO primarily relies on value-added criteria and wholly obtained goods, designed to facilitate preferential trade and ensure control over the origin of goods (Iran–Pakistan PTA, 2004; WTO, 1994). These rules play a crucial role in managing cross-border trade and preventing the entry of third-country goods, particularly in sensitive product categories (Cadot et al., 2006). However, studies indicate that weak implementation infrastructure, lack of institutional coordination, and differing customs interpretations remain the main challenges in applying the ROO under this Agreement (Estevadeordal & Suominen, 2006; WTO, 2011).

– Iran–Turkey Agreement

An examination of the Iran–Turkey Preferential Trade Agreement (PTA) indicates that the ROO under this agreement is relatively stringent, primarily due to concerns over trade diversion and the entry of third-country goods through Turkey (Iran–Turkey PTA, 2014; Baldwin, 2006). In cases where sufficient flexibility is lacking, these rules may, rather than preventing trade diversion, lead to the substitution of globally efficient inputs with more costly regional inputs (Viner, 1950; Baldwin, 2012).

2-4. Literature Review

A review of the literature indicates that relatively few Iranian researchers have investigated ROO comprehensively. The following highlights some of the most relevant studies in this area.

Faizi Chekab and Raja (2024) examined the concept and application of various criteria, including tariff classification changes, value-added thresholds, and specific production processes. The main focus of this study is on the Iranian legal approach and how these concepts are applied in ROO agreements and the latest draft consolidation by the WTO Rules of Origin Harmonization Working Group. The Researchers emphasize the importance of revising and enhancing the legal framework governing ROO in Iran and other countries.

Tavakoli (2022) examined the alignment of ROO agreements and WCO procedures with Iran's Customs Law. The study concluded that there is no universal organization for ROO.

Powers and Ubee (2020), in a Comparative study of 14 U.S. trade agreements, demonstrated that while the overall objectives of ROO are similar, the methods for determining origin and the stringency levels vary significantly across agreements. The results showed that newer agreements, such as the USMCA¹ implements stricter rules compared to NAFTA², particularly in the automotive and electronics sectors. They highlight that harmonizing ROO across agreements can reduce compliance costs and facilitate trade, recommending global standardization and the adoption of transparent certification models. Transparency, simplification, and convergence of these rules are essential for the effective use of preferential trade systems.

JafarMohammadi and Kiani (2015) examine the status and validity of ROO over different periods, as well as their effects on trade and customs relations of various countries, including Iran. Findings indicate that the world lacks a harmonized system of ROO, and establishing a uniform and consistent definition applicable across countries is necessary.

Unlike prior studies that predominantly adopted a theoretical approach while neglecting operational stakeholders, this research employs a practical

1. United States–Mexico–Canada Agreement

2. North American Free Trade Agreement

framework centered on ‘ROO’ and their impact on preferential tariff reductions within Iran’s trade agreements with Turkey, Pakistan, and the Eurasian Economic Union. The distinctive feature of this study lies in its empirical methodology, utilizing a researcher-designed questionnaire to collect data directly from exporters and industry practitioners. Consequently, this study yields more actionable insights compared to previous theoretical works.

3. Methodology and Data

This applied study aims to examine the extent and manner of utilizing ROO within trade agreements. The methodology combines a library and documentary review with a researcher-designed questionnaire. The statistical population comprised exporters of agricultural products, specifically targeting markets in Eurasia, Turkey, and Pakistan. In collaboration with the Iran Chamber of Commerce and provincial chambers, a purposive sample was selected. To ensure validity, the initial draft was reviewed by experts from these chambers and active exporters, whose feedback was incorporated to refine the instrument. A total of 200 questionnaires were completed and distributed electronically. Data analysis was conducted using SPSS software. To investigate relationships between demographic variables (gender, age, and education level) and respondents’ awareness of ROO, Kendall’s tau-c correlation and the Chi-square test were employed.

4. Findings

4-1. Description of Variables

An examination of demographic characteristics revealed that the majority were male (83%) and married (88%). The largest age-group frequency was observed among respondents aged 40 and 50 years old (42%). Regarding education levels, half of the respondents held a bachelor’s degree or lower, 28.5% have a master’s degree, and 17% have a doctoral degree or higher.

The second part of the questionnaire focused on evaluating the importance of ROO. The statistical analysis results are as follows.

The results indicated that 54% of the respondents had exported agricultural products up to four times, while 46% had exported more than four times to Turkey, Pakistan, and Eurasia. Regarding product type, vegetables and horticultural crops (e.g., tomatoes, cucumbers, peppers, eggplants) accounted for the largest share of exports (46%). horticultural products (e.g., dates, pistachios, raisins) ranked second (33.5%), and fishery products (e.g., fish, shrimp) ranked last (4%).

According to the results, 37% of respondents reported moderate awareness of ROO, which represents the largest group. 79% of respondents have not yet used the benefits associated with ROO. Among active exporters to Eurasia, only 20.5% utilized the ROO benefits, whereas 79.5% did not, despite exporting to the region.

A comparison of the trade volume and balance in the agricultural sector between Iran and the Eurasian Economic Union (EAEU) before and after the implementation of the agreement indicates that, although the trade volume increased by 80%, the trade balance became more negative, worsening from -228 to -343. This implies that while imports have grown significantly, export growth has been limited (Kazem Nejad et al., 2021).

The analysis questionnaire data reveals a duality in the awareness and performance levels of exporters. While the majority (65.5%) recognize the official authority for issuing COO (the Chamber of Commerce), and a significant portion (74.5%) repeatedly utilize these certificates, approximately one-third of business actors remain deprived of the preferential benefits of ROO due to information gaps or a lack of action. This finding confirms that despite a degree of awareness, a considerable number of exporters remain unaware of formal trade mechanisms and their associated advantages.

In response to the question “What have been the main challenges in issuing COO?”, 46% of respondents identified the lack of timely and transparent information dissemination as the most significant challenge in this area. This is followed by the non-electronic nature of the issuance process (3%), excessive bureaucracy and time-consuming procedures (33%), requests for

diverse documents without a standardized checklist (17%), and the relatively high cost of the issuance process (12%). 12% of respondents referred to other problems, including a shortage of technical staff and the absence of digital signatures and delays in transmitting specimen stamps and signatures of provincial chambers of commerce to customs authorities in destination countries. These findings suggest that institutional and administrative barriers, particularly inadequate information and administrative complexities, limit exporters' use of tariff preferences and reduce the effectiveness of trade agreements.

Based on the results 58% of respondents believe that the issued COO is readily accepted in the destination country. However, 42% reported that COO had been rejected by the destination country. The main reasons identified were insufficient coordination between the customs authorities of the two countries (79%), inconsistencies in the implementation of the agreement (59%), non-compliance of the COO with trade agreements requirements (50%), and absence of a clear standard in the destination country (21%) (respondents were allowed to select multiple options for this question). A noteworthy point is that the selection of the option "absence of a clear standard" by respondents effectively reflects the lack of sufficient awareness and technical knowledge among traders regarding the detailed calculation formulas that affect the issuance of COO under the relevant legal frameworks. Furthermore, 79% of respondents believe that the use of ROO has a significant impact on access to destination markets compared to other competitors.

According to the results, 66% of respondents rated training and the enhancement of traders' and business operators' knowledge as having a "high" or "very high" impact on more effective utilization of the capacity of ROO. This finding indicates that, from the perspective of the majority of traders, education, increased awareness, and clear explanation of issues related to ROO is indispensable prerequisites for the effective use of the benefits stipulated in trade agreements.

Finally, in response to the question of "how implementation can be improved to enhance the use of ROO," respondents highlighted several key

measures, including broad and timely dissemination of information, targeted training for traders and relevant executive managers, digitalization of communication between chambers of commerce and customs authorities in both exporting and importing countries, capacity building in customs laws and regulations, improved familiarity with target markets, and greater transparency and harmonization of information among the countries party to the agreement.

4-2. Inferential Statistics

In this section, the results from the questionnaire data and analysis are presented in summary.

In response to the hypothesis that the level of awareness of ROO differs significantly by gender, the results indicate that 39.5% of men have a *moderate* awareness, whereas 48.5% of women report a *high* awareness in this regard. All respondents who reported either *very low* or *very high* awareness were male. In contrast, about 38% of those with a *high* awareness were female.

Given that “level of awareness of ROO” is an ordinal variable and “gender” is a nominal variable, the chi-square (χ^2) test is employed to examine the relationship between them. The results show that the chi-square statistic (χ^2) equals 24 with 4 degrees of freedom ($df = 4$) and a significance level of Sig = 0.00 at the 95% confidence level. These findings indicate a statistically significant difference in the level of awareness of ROO across genders. Accordingly, based on the statistical evidence obtained, the research hypothesis is confirmed (Table 2).

Table 2. Chi-square Test Results for the Variable “Level of Awareness of ROO” by Gender

Test	Value	Degrees of Freedom (df)	Significance (Sig.)
Pearson Chi-Square	24.669	4	0.000

Source: Research findings

In response to the second hypothesis, which posits the existence of a significant difference in the level of awareness of ROO based on educational

attainment. The results indicate that 50% of individuals with a high school diploma have low awareness of the ROO. 68% of those with an associate degree have moderate awareness of the ROO. Among individuals with a bachelor's degree, 26% have low or moderate awareness of the ROO. At the master's level, 42% of individuals have moderate awareness, and 50% of those with a doctoral degree or higher have high awareness of the ROO.

In addition, 58% of those with low awareness of the ROO hold a high school diploma. Among individuals with very high awareness of the ROO, 33% have an associate's or bachelor's degree. 47% of those with very low awareness hold a bachelor's degree, and 53% of those with low awareness have a doctoral degree or higher.

Since both "awareness of ROO" and "education level" are ordinal variables, each consisting of 5 groups, Kendall's tau-b correlation test was employed to examine the relationship between them. The results are presented in Table 3.

Table 3. Kendall's Tau-b Test for the Variable "Awareness of ROO" by Education Level

			Education
Kendall's tau_b	Awareness of ROO	Correlation Coefficient	0.072
		Sig. (2-tailed)	0.213
		N	200

Source: Research findings

The results of the Kendall's tau-b test (at a 95% confidence level $p = 0.21$) indicate no correlation between education level and awareness of ROO. Consequently, the research hypothesis is rejected based on the available data.

The third research hypothesis posits that awareness of the ROO varies across age groups. Accordingly, the results show that 38% of individuals under 40 and 50% of those aged 40-50 exhibit a moderate level of ROO awareness. 33% of the over-50 group report a low level of awareness. Regarding high awareness levels, 33% of those with very high awareness are under 40, 59% fall within the 40-50 age bracket, and 66% are over 50.

Given that both "level of awareness of the ROO" and "age" are ordinal variables with unequal group sizes (5 and 3, respectively), Kendall's tau-c correlation test was employed to examine their relationship. The results, at a 95% confidence level ($p = 0.07$), indicate no significant correlation between age and ROO awareness. Consequently, the research hypothesis is rejected (Table 4).

Table 4. Kendall's tau-c test for the variable "Level of Awareness of ROO" by Age Group

			age
Kendall's tau_b	Awareness of ROO	Correlation Coefficient	-0.137
		Sig. (2-tailed)	0.78
		N	200

Source: Research findings

The fourth research hypothesis examines whether there is a statistically significant difference in the utilization of benefits arising from ROO across gender groups. To test this hypothesis, the data were subjected to statistical analysis. The results indicate that 80.2% of men and 75.8% of women have not yet utilized the benefits related to the ROO.

Table 5. Chi-Square Test for the Variable "Utilization of Benefits Related to ROO" by Gender

Test	Value	Degrees of Freedom (df)	Significance (Sig.)
Pearson Chi-Square	0.340	1	0.560

Source: Research findings

Since both "status of using the benefits related to ROO" and "gender," are nominal variables, the Chi-square test was conducted to examine the relationship between them. The results, with a Chi-square value (χ^2) at a 95%

confidence level, indicate no significant difference in the usage of (Sig = 0.56) ROO benefits across different gender groups. Therefore, based on the statistical evidence, the research hypothesis is rejected (Table 5).

The fifth hypothesis posits that the utilization of ROO-related benefits varies significantly across different education levels. The results of this analysis also indicate that all individuals with a diploma, 68% of those with an associate degree, 76% of those with a bachelor's degree, 86% of those with a master's degree, and 50% of those with a PhD or higher have not yet made use of the benefits related to the ROO.

Table 6. Chi-square test of the use of benefits related to ROO across education levels

Test	Value	Degrees of Freedom (df)	Significance (Sig.)
Pearson Chi-Square	34.730	4	0.000

Source: Research findings

Given that the variable *status of using benefits related to ROO* is nominal and the *education level* is ordinal, the Chi-square (χ^2) correlation test was conducted to examine the relationship between them. The results showed a Chi-square value of 34 with 4 degrees of freedom (df = 4). At a 95% confidence level and a significance level of Sig = 0.00, the findings indicate a statistically significant difference in the status of using benefits related to ROO across different education levels. Therefore, based on the available evidence, the research hypothesis is confirmed (Table 6).

To test the sixth hypothesis, which states that the status of using benefits related to ROO differs significantly across age groups, the results show that 81% of individuals under 40 years of age, 79% of those aged between 40 and 50, and 78% of individuals over 50 have not yet used the benefits related to ROO.

Given that the *status of using benefits related to ROO* is a nominal variable and the *age* is an ordinal variable, the Chi-square (χ^2) correlation test was employed to examine the relationship between them. According to the results of the Chi-square test, at the 95% confidence level and with a significance level of

Sig = 0.94, the findings indicate that there is no statistically significant difference in the status of using benefits related to ROO across different ages. Therefore, based on the available evidence, the research hypothesis is rejected (Table 7).

Table 7. Chi-square test of the variable “status of using benefits related to ROO” by age group

Test	Value	Degrees of Freedom (df)	Significance (Sig.)
Pearson Chi-Square	0.115	2	0.944

Source: Research findings

5. Discussion

This section presents the challenges and several recommendations for effectively leverage the potential of ROO. The most significant challenges identified in the process of obtaining and issuing COO are as follows:

- Although the Eurasian Agreement is relatively recent and clearer than many other trade agreements, trade stakeholders in this area have, in practice, failed to benefit from its preferences. The limited use of these benefits is attributed to a lack of awareness, insufficient knowledge, or excessive administrative bureaucracy. While this situation results in forgone benefits for traders, it also signifies inefficiency for the national economy as a whole. The underutilization of these benefits reflects a weakness in leveraging the agreement’s potential, which calls for corrective measures. Accordingly, one of the challenges is excessive bureaucracy, which leads to a time-consuming process for issuing COO. This often stems from inconsistencies among submitted documents—such as discrepancies between the commercial invoice, bill of lading, and the COO form—which led to rejections or amendments. Furthermore, the non-electronic issuance of certificates adds to the administrative burden and costs. Additionally, the absence of a standardized checklist frequently results in ad hoc requests for additional documents, causing significant

procedural delays. Finally, respondents highlighted the low adoption of digital signatures by Chambers of Commerce, particularly for exports to the EAEU and the Russian Federation, as another critical barrier.

- The results indicate that trade operators lack sufficient awareness and knowledge regarding the detailed calculation formulas influencing the issuance of COO in accordance with relevant regulations. This deficiency is largely attributable to the absence of technical expertise and limited information concerning agricultural products. Consequently, another major challenge in this area is the failure to train specialized human resources capable of effectively applying the procedural and calculation-related aspects embedded in ROO texts. In addition, relatively simple administrative issues—such as delays in submitting specimen stamps and authorized signatures of provincial Chambers of Commerce to customs authorities in destination countries—prevent exporters from benefiting from preferential trade advantages.
- According to the research findings, one of the most significant challenges in utilizing ROO is that, despite several years having passed since the implementation of trade agreements, a substantial proportion of trade actors still lack comprehensive and adequate knowledge of ROO and the associated benefits. This shows that the importance of COO for accessing preferential treatment is not fully recognized yet, and many traders remain unaware of their own economic interests.
- Another challenge relates to education, capacity building, and awareness enhancement regarding ROO, which are essential for effectively utilizing preferential trade arrangements. Therefore, clarification and transparency of the formulas associated with ROO and the procedures for obtaining related preferences are of critical importance. Moreover, limited coverage and a lack of transparency in information provision constitute additional challenges to trader training. One practical manifestation of this issue is the use of non-preferential COO for goods eligible for preferential agreements, as well as discrepancies between the HS Code listed on the

COO and that specified in the commercial invoice. These discrepancies can lead to customs clearance delays lasting several days.

- Other challenges include the lack of full conformity between COO and the provisions stipulated in trade agreements, insufficient coordination between the customs authorities of the two countries in implementing such agreements, and traders' inadequate understanding of the methods and detailed calculations used to determine the authenticity and origin of goods.

6. Conclusions and Policy Recommendations

Results indicate that, despite several years having passed since the implementation of trade agreements, a significant proportion of trade stakeholders in this field still lack comprehensive and adequate information on ROO and how to utilize the associated preferences effectively. It implies that the relevant public and private sector institutions, including the Chamber of Commerce, should design and implement a mechanism through which trade stakeholders are continuously informed—through transparent and centralized information dissemination led by the Chamber of Commerce and supported by provincial chambers and other relevant associations—about up-to-date information and the benefits derived from such knowledge.

The findings indicate that, in many cases, obtaining preferential treatment from the partner country requires demonstrating the authenticity of a product's origin through formulas involving a considerable level of detail. Accordingly, stakeholders must possess sufficient expertise in these calculations to engage in trade with the target country effectively. Unfortunately, field observations and stakeholders' statements indicate that most traders are either insufficiently informed about these issues or lack access to specialized experts required to manage this process. This situation results in the underutilization of preferential tariffs arising from the aforementioned agreements, thereby limiting access to target markets. Therefore, it is recommended that the Chamber of Commerce provide traders with ongoing training programs on these matters, enabling them to benefit from the advantages offered by such trade agreements fully.

Findings indicate that trade stakeholders have not yet fully recognized the importance of the COO for accessing preferential arrangements, thereby overlooking their own economic interests. Consequently, researchers in this field continue to emphasize that overcoming this challenge necessitates the implementation of structured and well-designed training programs.

Research findings indicate insufficient attention by both the public and private sector implementing bodies in the country to the trade rules associated with trade agreements. The consequences of this issue include the improper utilization of preferences granted under trade agreements by Iranian traders, which ultimately leads to a deviation from the positive outcomes originally envisaged for the country. Accordingly, it is recommended that the Iran Chamber of Commerce develop clear and simplified guidelines tailored to traders in each relevant sector to enhance the effective application of these rules.

Funding

This study received no financial support from any organization.

Authors' contributions

All authors contributed to preparing this paper.

Conflicts of interest

The authors declare no conflict of interest.

Acknowledgments

This article is derived from a doctoral dissertation titled: “The Effects of International Trade Agreements as a Tool of Economic Diplomacy on the Supply of Essential Goods in Iran”.

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