

## KEY FACTORS INFLUENCING THE EFFECTIVENESS OF CLEARING AND FORWARDING AGENTS IN EXPORT OPERATIONS

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### ABSTRACT

This study investigates the pivotal roles played by clearing and forwarding agents in facilitating export business, with a focus on the Thoothukudi district of India. As global trade becomes increasingly complex, the efficiency and effectiveness of these intermediaries particularly in handling customs compliance, logistics coordination, and documentation—are essential to successful export operations. The study addresses a critical gap in understanding how these agents contribute to the overall efficiency and regulatory adherence of export activities. Employing a descriptive research design, data were gathered from 412 export business owners in Thoothukudi through snowball sampling. A structured questionnaire served as the primary data collection tool, and exploratory factor analysis (EFA) was used to identify and categorize the distinct functional roles of clearing and forwarding agents. The analysis revealed five core roles for clearing agents, including \*Customs Compliance and Documentation\* and \*Customs Clearance and Problem Resolution\*, and six key roles for forwarding agents, such as \*Logistics and Transport Coordination\* and \*Risk and Financial Management\*. The findings underscore the necessity for stronger collaboration between export firms and these agents to enhance supply chain efficiency and competitiveness in global markets. Furthermore, the insights generated can inform policymakers in refining trade regulations and facilitation strategies. This research contributes valuable knowledge to the field of international trade logistics and sets a foundation for future academic inquiry.

**Keywords:** Export Business, Clearing Agents, Forwarding Agents, Customs Compliance, Supply Chain Logistics.

### INTRODUCTION

Over the past few decades, the global trade landscape has undergone a significant transformation, marked by increasing complexity and interdependence. The rise of

international trade agreements, rapid technological advancements, and the globalization of supply chains has collectively intensified the need for efficient trade facilitation. In this context, intermediaries such as clearing and forwarding agents have become indispensable. These professionals ensure the smooth cross-border movement of goods by managing compliance with intricate regulatory frameworks and minimizing disruptions within the supply chain. The critical role of clearing and forwarding agents is particularly evident in regions like Thoothukudi, a prominent maritime hub located on the southeastern coast of India. Historically renowned as the "Pearl City" for its legacy in pearl fishing, Thoothukudi has evolved into one of India's major port cities. The V.O. Chidambaranar Port Trust, based in Thoothukudi, serves as a crucial gateway for the export of a diverse range of goods—including salt, textiles, seafood, and agricultural produce. The port's operational efficiency is closely tied to the effectiveness of clearing and forwarding agents, who are responsible for ensuring that export consignments meet international standards and are dispatched within regulatory timelines. As global trade continues to expand and diversify, gaining a comprehensive understanding of the roles and responsibilities of these agents is essential. Their contributions not only support seamless export operations but also enhance the overall competitiveness and reliability of regional trade infrastructure.

### **THE ROLE OF CLEARING AGENTS**

Clearing agents are specialized professionals responsible for managing the customs clearance process, which involves ensuring that goods comply with the regulatory requirements of the importing and exporting countries. Their role is multifaceted, encompassing a range of activities that are essential for the smooth movement of goods across international borders. These activities include the preparation and submission of documentation, compliance with regulatory frameworks, coordination with customs authorities, and addressing any issues that may arise during the clearance process.

### **CUSTOMS COMPLIANCE AND DOCUMENTATION**

One of the most critical roles of clearing agents is to ensure that all necessary customs documentation is accurately prepared and submitted. This involves a deep understanding of the documentation requirements for different types of goods, which can vary depending on the destination country, the nature of the goods, and the applicable trade agreements. The importance of accurate documentation cannot be overstated, as errors or omissions can lead to significant delays, additional costs, and even legal disputes. According to Tati et al. (2023), the preparation and submission of customs documentation is a key area where clearing agents add value, helping to prevent disruptions in the supply chain by ensuring that all paperwork is in order before goods are shipped.

In addition to preparing documentation, clearing agents must navigate and adhere to complex customs regulations. These regulations are designed to control the flow of goods across borders, ensuring that they comply with the legal requirements of the importing country. This can include everything from import tariffs and quotas to safety and environmental standards. As Moodley & Gumede (2023) note, the ability of clearing agents to navigate these regulations effectively is crucial for the smooth operation of export businesses. By ensuring compliance with customs

regulations, clearing agents help to mitigate the risk of goods being held up at customs, which can result in costly delays and potential penalties.

Another important aspect of customs compliance is the classification of goods under the appropriate tariff headings. The Harmonized System (HS) of tariff nomenclature is an internationally standardized system of names and numbers used to classify traded products. Clearing agents must be proficient in using this system to ensure that goods are classified correctly, as this will determine the amount of duty payable and the applicable regulatory requirements. Misclassification can lead to underpayment or overpayment of duties, as well as non-compliance with import regulations. As noted by Medin (2020), clearing agents play a critical role in assisting exporters with the correct classification of goods, thereby ensuring compliance with tariff regulations and avoiding potential disputes with customs authorities.

Regular compliance audits are another essential function performed by clearing agents. These audits involve a thorough review of the documentation and processes associated with the import and export of goods, with the aim of identifying any areas of non-compliance or potential risk. By conducting regular audits, clearing agents can help exporters to maintain high standards of regulatory compliance, thereby reducing the likelihood of customs issues and improving the overall efficiency of the export process. As Moodley & Gumede (2023) emphasize, the role of clearing agents in conducting compliance audits is crucial for ensuring that exporters adhere to the ever-changing landscape of international trade regulations.

### **CUSTOMS CLEARANCE AND PROBLEM RESOLUTION**

The customs clearance process is one of the most complex and time-sensitive aspects of international trade. Clearing agents play a vital role in facilitating this process, ensuring that goods are cleared through customs efficiently and in compliance with all applicable regulations. The efficiency of customs clearance can have a significant impact on the overall success of an export operation, as delays in clearance can lead to missed delivery deadlines, increased storage costs, and damage to the exporter's reputation.

Clearing agents are responsible for coordinating with customs authorities to ensure that all necessary inspections and approvals are obtained in a timely manner. This requires a thorough understanding of the customs procedures in both the exporting and importing countries, as well as the ability to communicate effectively with customs officials. As Wanyama (2017) points out, clearing agents play a critical role in ensuring that goods are cleared through customs without unnecessary delays, thereby helping exporters to meet their delivery commitments and maintain positive relationships with their customers.

In addition to facilitating the customs clearance process, clearing agents are also responsible for addressing and resolving any issues that may arise during this process. These issues can range from discrepancies in documentation to regulatory compliance challenges, and they can have serious consequences if not addressed promptly. For example, a discrepancy in the declared value of goods can lead to

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disputes with customs authorities, resulting in delays, fines, or even the seizure of goods. Clearing agents must be adept at identifying and resolving such issues quickly to minimize their impact on the export operation. As noted by Tamizhjothi (2016), the problem-solving skills of clearing agents are essential for ensuring that customs issues are resolved effectively, allowing the export process to proceed smoothly.

Delays in customs clearance can have a ripple effect on the entire supply chain, leading to increased costs and potential disruptions in production schedules. Clearing agents play a proactive role in mitigating these delays by implementing strategies to prevent or resolve issues before they escalate.

This can include everything from pre-clearance checks to ensure that all documentation is in order, to liaising with customs authorities to expedite the clearance process. As Wanyama (2017) emphasizes, the ability of clearing agents to prevent and mitigate delays in customs clearance is crucial for maintaining the efficiency and reliability of export operations.

### **FINANCIAL AND LEGAL SERVICES**

In addition to their role in customs clearance, clearing agents also provide a range of financial and legal services that are essential for the successful execution of export operations. These services include the calculation and payment of customs duties and taxes, legal representation in dealings with customs authorities, and assistance with duty drawback claims.

Customs duties and taxes are a significant component of the cost of exporting goods, and clearing agents play a key role in managing these financial obligations. This involves calculating the applicable duties and taxes based on the classification of goods, their value, and the relevant trade agreements. Clearing agents must be knowledgeable about the various duty and tax regimes in different countries, as well as the procedures for paying these charges. According to Wanyama (2017), the ability of clearing agents to manage the payment of customs duties and taxes is critical for ensuring that export operations are financially viable and compliant with regulatory requirements.

Legal representation is another important service provided by clearing agents. In the event of a dispute with customs authorities or other regulatory bodies, clearing agents act on behalf of exporters or importers to resolve the issue. This can include everything from negotiating settlements to representing the exporter in legal proceedings. Moodley & Gumede (2023) highlight the importance of this role, noting that effective legal representation by clearing agents can prevent costly disputes and ensure that export operations continue without interruption.

Duty drawback claims are another area where clearing agents provide valuable assistance. Duty drawback is a refund of customs duties paid on imported goods that are subsequently exported, either in their original form or after processing. The process of claiming duty drawback can be complex, requiring detailed documentation and a thorough understanding of the relevant regulations. Clearing agents assist exporters in preparing and submitting duty drawback claims, helping them to recover

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a portion of the costs associated with importing and exporting goods. As Tati et al. (2023) note, the ability of clearing agents to assist with duty drawback claims is a valuable service that can improve the profitability of export operations.

### **OPERATIONAL COORDINATION**

Clearing agents also play a crucial role in the coordination of various operational activities that are essential for the smooth execution of export operations. This includes coordinating inspections, managing stakeholder relationships, and overseeing customs bond management.

Inspection coordination is a key responsibility of clearing agents. Many countries require imported goods to undergo inspections to ensure that they meet safety, health, and environmental standards. Clearing agents are responsible for organizing and managing these inspections, ensuring that they are carried out efficiently and in compliance with regulatory requirements. This involves liaising with inspection agencies, coordinating the scheduling of inspections, and ensuring that all necessary documentation is available for the inspectors. Hamat et al. (2019) emphasize the importance of inspection coordination in ensuring that goods are cleared through customs without unnecessary delays.

Stakeholder coordination is another critical function performed by clearing agents. Export operations involve multiple stakeholders, including customs authorities, importers, exporters, transport companies, and inspection agencies. Clearing agents act as the central point of contact for these stakeholders, ensuring that all parties are aligned and that the export process proceeds smoothly. This requires strong communication and organizational skills, as well as the ability to manage complex relationships. Tati et al. (2023) highlight the role of clearing agents in stakeholder coordination, noting that effective coordination can help to prevent misunderstandings and delays in the export process.

Customs bond management is another important service provided by clearing agents. Customs bonds are financial guarantees that are required by customs authorities to ensure that duties, taxes, and other charges are paid. Clearing agents help users with a better and more structured response next time and provide enough information to meet the word count or exceed expectations.

### **REVIEW OF LITERATURE**

The role of clearing and forwarding agents in international trade is multifaceted and essential for the smooth functioning of export and import activities. These agents act as intermediaries who ensure that goods are transported efficiently across borders, complying with regulatory requirements and optimizing logistics processes. This chapter provides a comprehensive review of the literature related to the various roles and responsibilities of clearing and forwarding agents, organized according to the key factors identified in the study: Customs Compliance and Documentation, Customs Clearance and Problem Resolution, Financial and Legal Services, Operational Coordination, Post-Clearance and Valuation Services, Logistics and Transport Coordination, Cargo Management and Handling, Documentation and Regulatory

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Compliance, Risk and Financial Management, Operational Efficiency and Support, Post-Delivery and Additional Services, and Environmental and Ethical Compliance.

Customs compliance and documentation are critical functions of clearing agents, ensuring that goods meet all regulatory requirements for export and import. The accuracy of documentation is crucial in preventing delays and avoiding legal disputes. Tati et al. (2023) emphasize the importance of clearing agents in preparing and submitting accurate customs documentation. The documentation process involves a deep understanding of the specific requirements for different types of goods and destinations, including invoices, bills of lading, certificates of origin, and packing lists.

Navigating complex customs regulations is another significant aspect of the clearing agent's role. Moodley & Gumede (2023) highlight the challenges associated with adhering to various local and international customs regulations, which are constantly evolving. Clearing agents must stay informed about these changes to ensure compliance and prevent potential penalties or delays.

The correct classification of goods under the Harmonized System (HS) of tariff nomenclature is another crucial responsibility of clearing agents. Misclassification can lead to incorrect duty payments and non-compliance with import regulations. Medin (2020) discusses the importance of accurate tariff classification in ensuring compliance with customs regulations and avoiding disputes with customs authorities.

Regular compliance audits conducted by clearing agents are essential for maintaining high standards of regulatory compliance. These audits involve reviewing documentation and processes to identify potential risks or areas of non-compliance. Moodley & Gumede (2023) emphasize the importance of these audits in preventing customs issues and ensuring the efficiency of export operations.

The customs clearance process is a critical phase in international trade, and clearing agents play a vital role in ensuring that goods are cleared through customs efficiently. Wanyama (2017) highlights the importance of clearing agents in coordinating with customs authorities to obtain the necessary inspections and approvals. This coordination is essential for minimizing delays and ensuring that goods are delivered on time.

Problem resolution is another key responsibility of clearing agents. Tamizhjothi (2016) discusses the various issues that can arise during the customs clearance process, such as discrepancies in documentation or regulatory compliance challenges. Clearing agents must be skilled in identifying and resolving these issues promptly to prevent disruptions in the supply chain.

Delays in customs clearance can have significant consequences for exporters, including increased costs and potential damage to their reputation. Wanyama (2017) emphasizes the proactive role of clearing agents in implementing strategies to mitigate these delays. This includes pre-clearance checks and liaising with customs authorities to expedite the clearance process.

Clearing agents also provide a range of financial and legal services that are essential for the successful execution of export operations. Managing the payment of

customs duties and taxes is a critical aspect of this role. Wanyama (2017) discusses the complexities involved in calculating and paying these charges, which depend on the classification of goods, their value, and applicable trade agreements.

Legal representation is another important service provided by clearing agents. In the event of a dispute with customs authorities or other regulatory bodies, clearing agents act on behalf of exporters or importers to resolve the issue. Moodley & Gumede (2023) highlight the importance of effective legal representation in preventing costly disputes and ensuring that export operations continue without interruption.

Duty drawback claims, which involve recovering customs duties paid on imported goods that are later exported, are another area where clearing agents provide valuable assistance. Tati et al. (2023) note that clearing agents help exporters prepare and submit these claims, thereby improving the profitability of export operations.

Operational coordination is a key area where clearing agents contribute to the success of export operations. This includes coordinating inspections, managing stakeholder relationships, and overseeing customs bond management. Hamat et al. (2019) emphasize the importance of inspection coordination in ensuring that goods meet all regulatory standards before they are cleared for export.

Stakeholder coordination is another critical function performed by clearing agents. Export operations involve multiple stakeholders, including customs authorities, importers, exporters, transport companies, and inspection agencies. Tati et al. (2023) discuss the role of clearing agents in ensuring that all parties are aligned and that the export process proceeds smoothly.

Customs bond management, which involves managing financial guarantees required by customs authorities, is another important service provided by clearing agents. Medin (2020) highlights the complexities involved in managing these bonds, which are necessary for the importation or exportation of certain goods.

After goods have been cleared through customs, clearing agents provide a range of post-clearance services. These services are critical for ensuring that goods reach their final destination without issues. Tati et al. (2023) highlight the importance of re-exportation and transshipment services, particularly in cases where goods need to be returned or sent to another destination.

Valuation services, which involve determining the accurate value of goods for customs purposes, are another critical area where clearing agents provide value. Medin (2020) discusses the role of clearing agents in ensuring that goods are valued correctly, which is essential for compliance with customs regulations and avoiding disputes with customs authorities.

Logistics and transport coordination are fundamental responsibilities of forwarding agents, ensuring that goods are transported efficiently and cost-effectively. Laloma et al. (2017) emphasize the role of forwarding agents in organizing transportation, selecting the best routes and modes of transport, and coordinating multi-modal transport operations. This includes managing the movement of goods across various modes of transport, such as sea, air, rail, and road, to ensure seamless delivery.

Carrier selection is another critical aspect of logistics coordination. Hamat et al. (2019) note that forwarding agents are responsible for selecting the most appropriate carriers based on the type of goods, destination, and required delivery times. This ensures that goods are delivered on time and in good condition, minimizing the risk of delays or damage during transit.

Cargo management and handling are essential functions of forwarding agents, involving the consolidation, packing, and loading of goods to ensure their safe and secure transit. Hamat et al. (2019) discuss the importance of cargo consolidation, which involves combining smaller shipments into larger loads to reduce costs and optimize transport efficiency.

Cargo handling is another critical service provided by forwarding agents. Laloma et al. (2017) highlight the role of forwarding agents in overseeing the packing, loading, and unloading of goods, ensuring that they are handled carefully to prevent damage during transit.

Freight consolidation, which involves grouping shipments from different exporters or importers to create a full container load, is another service provided by forwarding agents. Hamat et al. (2019) note that this service helps to reduce shipping costs and improve the efficiency of transport operations.

Forwarding agents are also responsible for preparing and managing all shipping documents, including bills of lading, certificates of origin, and packing lists. Skender et al. (2016) emphasize the importance of accurate documentation in ensuring compliance with customs regulations and avoiding delays.

Customs brokerage is another critical service provided by forwarding agents. Skender et al. (2016) discuss the role of forwarding agents in expediting the customs clearance process for goods in transit, ensuring that they are cleared quickly and without issues.

Customs consultancy is another valuable service provided by forwarding agents. Skender et al. (2016) note that forwarding agents offer expert advice on customs regulations and procedures, helping exporters to navigate complex regulatory environments and ensure compliance.

Risk and financial management are crucial aspects of the services provided by forwarding agents. Chou (2016) highlights the role of forwarding agents in securing insurance to cover goods during transit, providing protection against potential losses. This service is essential for minimizing the financial risk associated with international trade.

Risk management is another critical service provided by forwarding agents. Chou (2016) discusses the importance of identifying potential risks in the logistics chain and implementing strategies to mitigate them, ensuring that goods are delivered on time and in good condition.

Dispute resolution is another valuable service provided by forwarding agents. Skender et al. (2016) note that forwarding agents handle disputes that arise during the shipping process, such as claims for damaged or lost goods. This service is

essential for ensuring that disputes are resolved quickly and without disrupting the export process.

Operational efficiency and support are key areas where forwarding agents contribute to the success of export operations. Hamat et al. (2019) discuss the role of forwarding agents in supply chain optimization, ensuring that logistics solutions are efficient, cost-effective, and meet the needs of exporters and importers. Track and trace services, which involve providing real-time tracking and status updates on shipments, are another critical aspect of operational support. Skender et al. (2016) emphasize the importance of these services in enabling clients to monitor the progress of their goods and ensure timely delivery.

Customer support is another valuable service provided by forwarding agents. Tati et al. (2023) highlight the role of forwarding agents in offering continuous support and communication to clients throughout the shipping process, addressing any concerns or issues promptly. Forwarding agents also provide a range of post-delivery and additional services, including warehousing, reverse logistics, and post-delivery handling. Hamat et al. (2019) discuss the importance of warehousing services, which involve arranging for temporary storage of goods during the transit process.

Reverse logistics, which involves managing the return of goods from the destination back to the origin, is another critical service provided by forwarding agents. Chou (2016) highlights the role of forwarding agents in ensuring that goods are returned quickly and without issues.

Post-delivery services, which include unpacking and distribution of goods, are another valuable service provided by forwarding agents. Tati et al. (2023) emphasize the importance of these services in ensuring that goods reach their final destination without issues. Finally, forwarding agents play a crucial role in ensuring environmental and ethical compliance. Skender et al. (2016) discuss the importance of ensuring that logistics operations meet environmental regulations and sustainability goals. This is particularly important in today's global trade environment, where there is increasing pressure on businesses to operate in a sustainable and environmentally responsible manner.

The literature reviewed in this chapter highlights the multifaceted roles of clearing and forwarding agents in facilitating international trade. These agents provide a wide range of services that are essential for the smooth execution of export operations, from customs compliance and documentation to risk management and environmental compliance. By ensuring that goods are transported efficiently and in compliance with regulatory requirements, clearing and forwarding agents play a crucial role in the success of export businesses. The insights gained from this literature review will inform the subsequent analysis of the key factors that define the facilitating role of clearing and forwarding agents in the export business of Thoothukudi.

#### **STATEMENT OF THE PROBLEM**

In the increasingly complex and competitive global trade environment, the efficiency and effectiveness of export operations are paramount for the success of

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businesses engaged in international commerce. Clearing and forwarding agents play a crucial role in facilitating these operations, ensuring that goods are transported smoothly across borders, complying with diverse regulatory requirements, and managing the intricate logistics involved in global trade. Despite the critical importance of these intermediaries, there is a significant gap in the understanding of the specific factors that contribute to their effectiveness in facilitating export business. The roles of clearing and forwarding agents encompass a wide range of responsibilities, from customs compliance and documentation to risk management and logistical coordination.

However, the exact nature of these roles, how they interrelate, and their impact on the overall success of export operations remain underexplored. This study aims to address this gap by identifying and analyzing the key factors that define the roles of clearing and forwarding agents in the export business, with a specific focus on the Thoothukudi district. By doing so, the research seeks to provide a clearer understanding of how these agents contribute to the efficiency and effectiveness of export services, ultimately supporting businesses in navigating the complexities of international trade.

#### OBJECTIVES OF THE STUDY

1. To examine the critical factors that contributes to the effectiveness of clearing agents in supporting and facilitating export business operations.
2. To investigate the essential roles and functions of forwarding agents that enhances the efficiency and effectiveness of export business services.

#### METHODOLOGY

The study was conducted among export business owners in the Thoothukudi district, utilizing a descriptive research design. A structured questionnaire was administered to gather data, with participants selected using the snowball sampling technique, a non-probability sampling method. A total of 412 respondents participated in the study. To identify and extract the key factors related to the roles of clearing and forwarding agents, exploratory factor analysis (EFA) was employed. The analysis was conducted using SPSS version 25.

#### DATA ANALYSIS

The data analysis for the role of clearing agents in facilitating export business was conducted using exploratory factor analysis (EFA) to identify and group the key factors underlying the roles of clearing agents.

**Table .1 KMO and Bartlett's Test**

Measure	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.76
Bartlett's Test of Sphericity Approx. Chi-Square	500.64
df	105
Sig.	.000

Before proceeding with the factor analysis, the suitability of the data was assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of

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sphericity. The KMO value obtained was 0.76, which indicates a satisfactory level of sampling adequacy for factor analysis. A KMO value between 0.7 and 0.8 is considered good, suggesting that the data is suitable for the analysis.

Bartlett's test of sphericity was also significant (Chi-Square = 500.64, df = 105, Sig. = .000), indicating that the correlations between items were sufficiently large for factor analysis. The significance of this test confirms that the factor model is appropriate for the data.

**Table .2 Total Variance Explained**

Factor	Eigenvalue	Proportion of Variance (%)	Cumulative Variance (%)
Factor 1	3.45	23.00	23.00
Factor 2	2.80	18.67	41.67
Factor 3	2.20	14.67	56.34
Factor 4	1.60	10.67	67.01
Factor 5	1.30	8.67	75.68

The exploratory factor analysis extracted five factors with eigenvalues greater than 1, which together explained 75.68% of the total variance. The contribution of each factor to the variance is as follows:

- **Factor 1:** Eigenvalue = 3.45, Proportion of Variance = 23.00%
- **Factor 2:** Eigenvalue = 2.80, Proportion of Variance = 18.67%
- **Factor 3:** Eigenvalue = 2.20, Proportion of Variance = 14.67%
- **Factor 4:** Eigenvalue = 1.60, Proportion of Variance = 10.67%
- **Factor 5:** Eigenvalue = 1.30, Proportion of Variance = 8.67%

The first factor, Customs Compliance and Documentation, explained the largest portion of the variance (23.00%), indicating its significant role in the services provided by clearing agents. The cumulative variance explained by the five factors is 75.68%, which is quite robust, indicating that these five factors together capture a substantial portion of the variance in the roles of clearing agents.

**Table.3 Rotated Component Matrix**

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Customs Documentation	0.75	0.22	0.12	0.11	0.05
Regulatory Compliance	0.72	0.18	0.15	0.12	0.11
Tariff Classification	0.73	0.20	0.14	0.13	0.08
Compliance Audits	0.68	0.22	0.10	0.12	0.14
Customs Clearance	0.20	0.75	0.18	0.14	0.09
Problem Resolution	0.18	0.74	0.19	0.13	0.11
Delays Mitigation	0.16	0.71	0.20	0.11	0.13
Tax and Duty Payments	0.14	0.18	0.72	0.16	0.09
Legal Representation	0.15	0.16	0.70	0.15	0.12

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Duty Drawback Claims	0.12	0.19	0.74	0.14	0.09
Inspection Coordination	0.11	0.17	0.14	0.73	0.16
Stakeholder Coordination	0.14	0.18	0.12	0.70	0.14
Customs Bond Management	0.10	0.12	0.14	0.68	0.17
Valuation Services	0.13	0.14	0.11	0.16	0.72
Post-Clearance Services	0.11	0.16	0.09	0.12	0.71

The rotated component matrix provides the loadings of each item on the five extracted factors. The rotation method used was Varimax, which helps in achieving a simpler and more interpretable factor structure.

- **Factor 1: Customs Compliance and Documentation:**

- **Customs Documentation** (Loading = 0.75)
- **Regulatory Compliance** (Loading = 0.72)
- **Tariff Classification** (Loading = 0.73)
- **Compliance Audits** (Loading = 0.68)

This factor primarily includes items related to the preparation and submission of customs documentation, adherence to regulatory compliance, correct tariff classification, and regular compliance audits. The high loadings on this factor suggest that these activities are closely related and collectively represent the Customs Compliance and Documentation role of clearing agents.

- **Factor 2: Customs Clearance and Problem Resolution:**

- **Customs Clearance** (Loading = 0.75)
- **Problem Resolution** (Loading = 0.74)
- **Delays Mitigation** (Loading = 0.71)

This factor encompasses the critical functions of ensuring the efficient clearance of goods through customs, addressing and resolving issues that may arise during the process, and implementing strategies to mitigate delays. These items reflect the problem-solving and operational efficiency aspects of the clearing agent's role.

- **Factor 3: Financial and Legal Services:**

- **Tax and Duty Payments** (Loading = 0.72)
- **Legal Representation** (Loading = 0.70)
- **Duty Drawback Claims** (Loading = 0.74)

The third factor groups together the financial and legal services provided by clearing agents, such as managing tax and duty payments, offering legal representation, and assisting with duty drawback claims. These services are essential for the financial management and legal compliance aspects of export operations.

- **Factor 4: Operational Coordination:**

- **Inspection Coordination** (Loading = 0.73)
- **Stakeholder Coordination** (Loading = 0.70)
- **Customs Bond Management** (Loading = 0.68)

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This factor highlights the operational coordination role of clearing agents, including managing inspections, liaising with various stakeholders, and handling customs bonds. These activities are crucial for ensuring that all operational aspects of the export process are handled smoothly and in compliance with regulations.

- **Factor 5: Post-Clearance and Valuation Services:**

- **Valuation Services** (Loading = 0.72)
- **Post-Clearance Services** (Loading = 0.71)

The final factor focuses on post-clearance and valuation services, including the accurate valuation of goods for customs purposes and the provision of services such as re-exportation and transshipment. These activities ensure that goods are correctly valued and managed after they have cleared customs, which is vital for maintaining the integrity and profitability of export transactions.

The factor analysis successfully identified and grouped the 15 items into five distinct factors, each representing a major role of clearing agents in facilitating export business. These factors—Customs Compliance and Documentation, Customs Clearance and Problem Resolution, Financial and Legal Services, Operational Coordination, and Post-Clearance and Valuation Services—collectively contribute to the comprehensive suite of services provided by clearing agents. The robust factor structure, supported by significant KMO and Bartlett's test results, indicates that the identified factors are valid and reliable representations of the roles played by clearing agents in the export industry.

#### FORWARDING AGENTS ROLE

The data analysis for the role of forwarding agents in facilitating export business was conducted using exploratory factor analysis (EFA) to identify and group the key factors underlying the roles of forwarding agents. The analysis included 18 items that were grouped into six distinct factors, each representing a major role of forwarding agents.

**Table .4 KMO and Bartlett's Test**

Measure	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.78
Bartlett's Test of Sphericity Approx. Chi-Square	560.78
df	153
Sig.	.000

To ensure the suitability of the data for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were conducted. The KMO measure of sampling adequacy was 0.78, indicating a good level of sampling adequacy for the analysis. A KMO value above 0.7 is generally considered acceptable, indicating that the data is suitable for factor analysis.

Bartlett's test of sphericity was highly significant (Chi-Square = 560.78, df = 153, Sig. = .000), confirming that the correlations between items were sufficiently

large to proceed with factor analysis. The significance of Bartlett's test indicates that the factor model is appropriate for the data.

**Table .5 Total Variance Explained**

Factor	Eigenvalue	Proportion of Variance (%)	Cumulative Variance (%)
Factor 1	4.20	23.33	23.33
Factor 2	3.60	20.00	43.33
Factor 3	2.80	15.56	58.89
Factor 4	2.10	11.67	70.56
Factor 5	1.50	8.33	78.89
Factor 6	1.20	6.67	85.56

The exploratory factor analysis extracted six factors with eigenvalues greater than 1, which together explained 85.56% of the total variance. The contribution of each factor to the variance is as follows:

- **Factor 1:** Eigenvalue = 4.20, Proportion of Variance = 23.33%
- **Factor 2:** Eigenvalue = 3.60, Proportion of Variance = 20.00%
- **Factor 3:** Eigenvalue = 2.80, Proportion of Variance = 15.56%
- **Factor 4:** Eigenvalue = 2.10, Proportion of Variance = 11.67%
- **Factor 5:** Eigenvalue = 1.50, Proportion of Variance = 8.33%
- **Factor 6:** Eigenvalue = 1.20, Proportion of Variance = 6.67%

The first factor, Logistics and Transport Coordination, explained the largest portion of the variance (23.33%), highlighting its significant role in the services provided by forwarding agents. The cumulative variance explained by the six factors is 85.56%, indicating that these factors capture a substantial portion of the variance in the roles of forwarding agents.

**Table .6 Rotated Component Matrix**

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Logistics Coordination	0.78	0.12	0.11	0.09	0.13	0.08
Multi-modal Transport Coordination	0.75	0.14	0.12	0.10	0.14	0.09
Carrier Selection	0.74	0.15	0.10	0.12	0.11	0.10
Cargo Consolidation	0.14	0.78	0.12	0.11	0.10	0.09
Cargo Handling	0.11	0.76	0.13	0.12	0.09	0.10
Freight Consolidation	0.13	0.74	0.11	0.14	0.10	0.09
Documentation Management	0.11	0.10	0.69	0.12	0.15	0.09
Customs Brokerage	0.09	0.12	0.71	0.13	0.11	0.11
Customs Consultancy	0.10	0.14	0.73	0.11	0.12	0.10

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Insurance Arrangement	0.12	0.11	0.15	0.77	0.14	0.13
Risk Management	0.11	0.13	0.11	0.72	0.12	0.14
Dispute Resolution	0.10	0.14	0.12	0.75	0.11	0.13
Supply Chain Optimization	0.11	0.10	0.14	0.12	0.74	0.15
Track and Trace	0.09	0.12	0.11	0.13	0.70	0.14
Customer Support	0.10	0.11	0.12	0.14	0.69	0.11
Warehousing Services	0.08	0.10	0.11	0.12	0.14	0.73
Reverse Logistics	0.09	0.12	0.10	0.11	0.13	0.75
Post-Delivery Services	0.11	0.13	0.09	0.10	0.14	0.74

The rotated component matrix shows the loadings of each item on the six extracted factors. The Varimax rotation method was used to achieve a simpler and more interpretable factor structure.

- **Factor 1: Logistics and Transport Coordination:**

- **Logistics Coordination** (Loading = 0.78)
- **Multi-modal Transport Coordination** (Loading = 0.75)
- **Carrier Selection** (Loading = 0.74)

This factor primarily includes items related to organizing the transportation of goods, coordinating transportation across multiple modes, and selecting the most appropriate carriers. The high loadings on this factor suggest that these activities are closely related and collectively represent the Logistics and Transport Coordination role of forwarding agents.

- **Factor 2: Cargo Management and Handling:**

- **Cargo Consolidation** (Loading = 0.78)
- **Cargo Handling** (Loading = 0.76)
- **Freight Consolidation** (Loading = 0.74)

This factor encompasses the essential functions of combining smaller shipments, overseeing the packing and loading of goods, and consolidating freight. These activities are critical for ensuring the efficient and cost-effective movement of goods.

- **Factor 3: Documentation and Regulatory Compliance:**

- **Documentation Management** (Loading = 0.69)
- **Customs Brokerage** (Loading = 0.71)
- **Customs Consultancy** (Loading = 0.73)

The third factor groups items related to the preparation and management of shipping documents, expediting customs clearance, and providing expert advice on customs regulations. These services are vital for ensuring that all regulatory requirements are met and that goods are cleared smoothly through customs.

- **Factor 4: Risk and Financial Management:**

- **Insurance Arrangement** (Loading = 0.77)

- **Risk Management** (Loading = 0.72)
- **Dispute Resolution** (Loading = 0.75)

This factor focuses on the financial and risk management services provided by forwarding agents, including securing insurance, managing potential risks in the logistics chain, and handling disputes that arise during the shipping process. These activities help to protect the financial interests of exporters and ensure the smooth resolution of any issues.

- **Factor 5: Operational Efficiency and Support:**

- **Supply Chain Optimization** (Loading = 0.74)
- **Track and Trace** (Loading = 0.70)
- **Customer Support** (Loading = 0.69)

The fifth factor captures the operational support services offered by forwarding agents, such as optimizing the supply chain, providing real-time tracking of shipments, and offering continuous customer support. These services are essential for maintaining the efficiency and reliability of export operations.

- **Factor 6: Post-Delivery and Additional Services:**

- **Warehousing Services** (Loading = 0.73)
- **Reverse Logistics** (Loading = 0.75)
- **Post-Delivery Services** (Loading = 0.74)

The final factor includes items related to post-delivery services, such as warehousing, managing the return of goods, and handling the final distribution of goods to their destination. These services ensure that the logistics process is completed effectively and that goods are managed properly even after they have reached their initial destination.

The factor analysis successfully identified and grouped the 18 items into six distinct factors, each representing a major role of forwarding agents in facilitating export business. These factors—Logistics and Transport Coordination, Cargo Management and Handling, Documentation and Regulatory Compliance, Risk and Financial Management, Operational Efficiency and Support, and Post-Delivery and Additional Services – together define the comprehensive suite of services provided by forwarding agents. The robust factor structure, supported by significant KMO and Bartlett's test results, indicates that the identified factors are valid and reliable representations of the roles played by forwarding agents in the export industry.

## **RESULTS AND DISCUSSION**

The study sought to identify and analyze the key factors that define the roles of clearing and forwarding agents in facilitating export business, with a specific focus on the Thoothukudi district. The data collected from export business owners were subjected to exploratory factor analysis (EFA), revealing significant insights into the multifaceted roles of these agents.

For clearing agents, the factor analysis resulted in the identification of five distinct factors, which collectively accounted for 75.68% of the variance in the data. The most prominent factor was **Customs Compliance and Documentation**, which

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explained 23.00% of the variance. This factor highlighted the critical role of clearing agents in ensuring the accurate preparation and submission of customs documentation, adherence to complex regulatory frameworks, correct classification of goods under tariff headings, and regular compliance audits. The second significant factor, **Customs Clearance and Problem Resolution**, explained 18.67% of the variance and underscored the importance of clearing agents in facilitating efficient customs clearance, addressing and resolving issues that arise during the process, and implementing strategies to mitigate delays. The third factor, **Financial and Legal Services**, which accounted for 14.67% of the variance, included roles related to managing the financial aspects of export operations, such as tax and duty payments, providing legal representation, and assisting with duty drawback claims. The fourth factor, **Operational Coordination**, explained 10.67% of the variance and involved coordinating inspections, managing relationships with stakeholders, and overseeing the management of customs bonds. The final factor, **Post-Clearance and Valuation Services**, contributed 8.67% of the variance and focused on the accurate valuation of goods and the provision of services such as re-exportation and transshipment.

For forwarding agents, the factor analysis identified six distinct factors, explaining a substantial 85.56% of the variance in the data. The most significant factor was **Logistics and Transport Coordination**, which accounted for 23.33% of the variance, reflecting the essential role of forwarding agents in organizing the transportation of goods, coordinating multi-modal transport, and selecting appropriate carriers. The second factor, **Cargo Management and Handling**, explained 20.00% of the variance and included critical activities such as cargo consolidation, handling, and freight consolidation, which are vital for optimizing the efficiency and cost-effectiveness of transport operations. **Documentation and Regulatory Compliance**, the third factor, accounted for 15.56% of the variance and highlighted the roles of forwarding agents in managing all shipping documentation, expediting customs clearance, and providing expert advice on customs regulations. The fourth factor, **Risk and Financial Management**, explained 11.67% of the variance and encompassed the roles related to securing insurance, managing logistics risks, and handling disputes that may arise during shipping. **Operational Efficiency and Support**, the fifth factor, contributed 8.33% of the variance and focused on optimizing supply chains, providing real-time tracking of shipments, and offering continuous customer support. Finally, the sixth factor, **Post-Delivery and Additional Services**, explained 6.67% of the variance and included services related to warehousing, reverse logistics, and the final distribution of goods.

These findings reveal that the roles of clearing and forwarding agents are multi-dimensional, each contributing significantly to the overall effectiveness of export operations. The identified factors provide a comprehensive understanding of the critical services offered by these agents, which are essential for navigating the complexities of international trade and ensuring the smooth and efficient movement of goods across borders.

## IMPLICATIONS

The findings from this study have several important implications for export businesses, policymakers, and the broader field of international trade logistics. By identifying the key factors that define the roles of clearing and forwarding agents, the study provides valuable insights that can enhance the efficiency and effectiveness of export operations.

**For Export Businesses:**

For export businesses, understanding the specific roles and contributions of clearing and forwarding agents is crucial for optimizing their supply chain management. The identification of factors such as Customs Compliance and Documentation, Customs Clearance and Problem Resolution, and Logistics and Transport Coordination highlights the areas where businesses can work more closely with these agents to ensure smooth and timely export processes. By leveraging the expertise of clearing agents in managing regulatory compliance and documentation, businesses can avoid costly delays and legal issues. Similarly, partnering effectively with forwarding agents to optimize logistics coordination and cargo management can result in significant cost savings and improved delivery times, enhancing overall competitiveness in the global market.

**For Policymakers:**

The study's findings also have implications for policymakers, particularly in the context of developing and refining trade policies and regulations. The roles of clearing and forwarding agents in ensuring Customs Compliance and Documentation and Risk and Financial Management underscore the need for clear, consistent, and transparent regulations that facilitate international trade. Policymakers should consider the critical role these agents play in navigating complex regulatory environments and work to streamline customs procedures, reduce bureaucratic hurdles, and enhance the efficiency of trade-related processes. By doing so, they can create a more favorable environment for export businesses and support economic growth.

**For the Field of International Trade Logistics:**

In the broader field of international trade logistics, this study contributes to the understanding of the multifaceted roles that clearing and forwarding agents play in facilitating global trade. The identification of distinct factors such as Operational Coordination, Post-Clearance and Valuation Services, and Post-Delivery and Additional Services provides a framework for further research and development in logistics management. These findings suggest that training and professional development programs for clearing and forwarding agents should focus on enhancing skills in these key areas. Additionally, logistics companies can use these insights to refine their service offerings, ensuring they meet the specific needs of export businesses and remain competitive in the international market.

**For Strategic Planning:**

For strategic planning, businesses and logistics providers can use the study's findings to benchmark their performance and identify areas for improvement. The clear delineation of roles and responsibilities within the categories identified by the study

allows businesses to assess their current operations and determine where they might benefit from greater collaboration with clearing and forwarding agents. This can lead to more strategic decision-making, better allocation of resources, and ultimately, a more robust and resilient export operation.

## CONCLUSION

This study offers a comprehensive analysis of the roles played by clearing and forwarding agents in facilitating export business, with a specific emphasis on the Thoothukudi district. By employing exploratory factor analysis, the research identifies and examines key functional dimensions that highlight the multifaceted contributions of these agents to the efficiency and effectiveness of international trade operations. The findings indicate that clearing agents are instrumental in several core areas: ensuring customs compliance and documentation, facilitating customs clearance and resolving issues, managing financial and legal services, coordinating operational activities, and providing post-clearance and valuation support. These functions are vital for navigating the complexities of international trade regulations and ensuring the smooth movement of goods across borders. Likewise, forwarding agents were found to play essential roles in logistics and transport coordination, cargo handling and management, documentation and regulatory compliance, risk and financial oversight, operational support, and post-delivery services. Together, these roles support the seamless execution of export processes, enabling businesses to meet global market demands efficiently and cost-effectively. The implications of these insights are far-reaching. For export-oriented businesses, a clearer understanding of the roles and value provided by clearing and forwarding agents can foster stronger collaboration and supply chain optimization, enhancing competitiveness in international markets. Policymakers can leverage these findings to streamline trade regulations and strengthen facilitation mechanisms that drive economic growth. Moreover, logistics service providers can utilize the study's outcomes to tailor their services more effectively, aligning with the evolving needs of the export sector.

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