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Impact of Customs Clearance Efficiency on Import and Export Operations

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Abstract

This work investigates how fast customs processing shapes import and export tasks, based on insights from Chennai's Customs House Agents. Instead of broad assumptions, it zeroes in on real effects - how paperwork flow influences trade pace, precision, openness, and daily function. Using a clear framework, the effort pulls firsthand details from sixty individuals in freight handling via organized surveys. Clearance speed matters a lot when goods move through borders. Paperwork mistakes slow things down more than expected. Digital platforms work better where they are used. When processes stay hidden, delays grow without warning. People involved need to talk - silence breaks the chain. Numbers helped show what connects to what. Some patterns stood out after sorting results by share of responses. A method checking differences across groups pointed at key mismatches. Another test revealed whether two sets truly diverged or just seemed to. Surprisingly, smooth customs check help imports and exports move faster because wait times drop when paperwork gets handled right. Digital tools step in - making processes quicker while smoothing out how traders work together. Still, mistakes on forms pop up too often, slowing everything down again. Even with progress, inconsistent rules across borders leave gaps that trip things up. Clearance bottlenecks remain a real issue despite tech upgrades behind the scenes. Technology could help more if paired with consistent customs rules across borders. Training sessions held often might keep teams sharp. Coordination among those involved tends to run better when communication stays clear. Smoother trade between countries often follows when these pieces fit together.

Keywords: Customs efficiency, trade facilitation, customs house agent, EDI, ICEGATE, documentation, clearance delay, import-export

1.INTRODUCTION

Getting through customs quickly matters a lot when moving goods across borders. Across India, people called

Customs House Agents - sometimes referred to as brokers - guide businesses through rules tied to imports and exports. These agents handle paperwork, work out tax amounts, plus link up with docks and freight firms following the guidelines of the 1962 Customs Act. When border checks move fast, shipments avoid holdups, spend less money, while cargo keeps flowing without hiccups in global commerce. Busy docks and planes make Chennai central to shipping across nations. Thanks to tools like ICEGATE and EDI, checking goods at borders now moves faster than before. Still, mistakes on papers slow things down more often than expected. Waiting times pop up when teams fail to line up their steps properly. Customs smoothness shapes how well imports and exports run in that city.

1.1 Objectives of the Study

The main goal of this study is to check how well customs procedures work for import and export trade at the Customs House Agent in Chennai. We want to look at how they perform how effective their procedures are and how they help trade.

The other goals are:

- To find out how efficient customs clearance is and what problems stakeholders face.
- To see how Electronic Data Interchange systems and online customs portals affect how fast and transparent procedures are.
- To study how accurate documentation is, how clear regulations are and how well stakeholders work together in customs procedures.
- To evaluate if customs operations are cost-effective provide service and make stakeholders satisfied, with customs operations.

1.2 Research Gap

Customs procedures are important for trade. Not many people have looked at how well they work at the company level. Most studies focus on picture trade policies and rules instead of looking at how things get cleared how long it takes, if the paperwork is right and if everyone is working together. There are not studies that look at how Customs House Agents help make things more efficient by taking care of paperwork making sure everyone follows the rules and getting everyone to work together. We do not know much about how digital things like filing, EDI and faceless assessments affect how fast and accurate customs procedures are. Customs procedures in India are not well understood at the company level. This study helps fill in these gaps by looking at what happens on the ground with a Customs House Agent in Chennai. Customs House Agents like the one in Chennai play a role, in making customs procedures work better. This study looks at how they do it.

2.REVIEW OF THE LITERATURE

A growing body of research shows how important it is to make customs more efficient to help trade. The following review brings together findings from various studies done in different parts of the world. Roba (2025) investigated import customs procedures at the One Stop Border Post in Ethiopia. The study used numbers and statistics to understand how things work. It found that simpler customs procedures greatly improved trade outcomes at border crossings.

Shiberu and Tamene (2021) studied import customs procedures in Adama City, Ethiopia.

They used a mix of methods. Talked to 110 people. Their study found that using technology for customs managing risks and training staff had a positive impact on trade. However complex customs laws and regulations had an effect making things less efficient.

Sitisara, Rattanawong and Vongmanee (2023) had a vision for changing customs brokerage in Thailand. They introduced the 'Easy Paste' digital model. Their research showed that using customs systems made brokers more important in the global supply chain. This improved both compliance and customer experience.

Medin (2021) used data on trade to show that customs brokers help reduce costs of clearing goods through customs. The study found that smaller producers and those with trade values rely more on brokers. This makes a case for the customs brokerage profession.

Czerwinski (2021) looked at how the COVID-19 affected customs systems in the European Union. The study found that countries that reduced customs clearance time and costs were more resilient. It emphasized the need for clearance of critical goods during emergencies and digital infrastructure.

Ayesu, Sakyi and Baidoo (2024) used a gravity model to study trade in 33 countries from 2006 to 2018. They found that efficient seaports greatly improve trade performance. Their findings highlighted the need for policy reforms on port and customs infrastructure.

Ugryn, Bondarenko and Shevchuk (2022) assessed customs authority efficiency in Ukraine during law. They developed a framework to measure efficiency. Their survey found gaps in service delivery. Called for reforms and changes within customs institutions. All these studies show that customs efficiency depends on factors, including regulations, digital infrastructure, human capital and coordination between agencies. This study will investigate these factors, in the customs brokerage context.

3. RESEARCH METHODOLOGY

Research methodology provides the structured scientific framework for collecting, analysing, and interpreting data to achieve study objectives. The present study adopts a systematic approach to evaluate the efficiency of customs procedures in real operational environments.

The study uses a way to look at things, which is good for describing and looking at what people are already doing

3.1 Sources of Data

The study utilized both primary and secondary data sources for the purpose of analysis.

Primary Data

Primary data were collected through a structured questionnaire administered to professionals engaged in customs clearance, import and export operations, and logistics management. The questionnaire consisted of

20 questions covering demographic details, perceptions regarding customs procedures, effectiveness of digital systems, operational challenges, and overall satisfaction levels. Respondents' opinions and satisfaction were measured using a five-point Likert scale ranging from 1 to 5.

Secondary Data

Secondary data were obtained from various authoritative and published sources, including the Customs Act, 1962, Foreign Trade Policy documents, circulars issued by the Central Board of Indirect Taxes and Customs (CBIC), and resources available on the ICEGATE portal. In addition, academic journals, research articles, and trade publications were reviewed to provide theoretical and regulatory support for the study. These secondary sources contributed to a broader understanding of customs clearance procedures, import-export operations, and logistics management practices

3.3 Sampling Plan

The study adopted a convenience sampling technique to collect primary data from professionals involved in customs-related activities in Chennai. A total of 60 respondents were selected from organizations associated with Customs House Agents (CHA) and logistics operations due to their accessibility and relevance to the research objectives.

The sample comprised customs brokers, freight forwarders, logistics personnel, importers, and exporters who are actively engaged in customs clearance and international trade operations. Respondents were chosen because they possess practical knowledge and experience relating to customs procedures and freight movement, thereby providing meaningful insights for the study.

The demographic profile of the respondents indicates that a majority of the participants (60%) belonged to the age group of 20–30 years, reflecting the presence of a relatively young workforce in the customs and logistics sector. In terms of gender distribution, 58.3% of the respondents were male and 41.7% were female.

The respondents primarily represented the logistics and freight forwarding sector, where maritime transportation is the dominant mode used for the movement of goods in international trade.

3.4 Data Analysis Tools : The data collected was analyzed using EXCEL and SPSS. The following tools were used to look at the data we collected:

- Percentage Analysis
- Descriptive Statistics
- Chi-Square Test
- Independent Samples t-Test
- Comparative Analysis.

4. DATA ANALYSIS AND INTERPRATION

4.1 Descriptive Analysis

Descriptive analysis summarizes respondents' perceptions across key dimensions of customs efficiency. The results are presented in Table 1.

Statement	N	Mean	Std. Dev.	Median
Customs procedures are efficient	60	3.42	1.08	3.00
Clearance completed within reasonable time	60	3.57	1.02	4.00
Documentation requirements are easy to understand	60	3.63	0.98	4.00
Delays in customs clearance occur frequently	60	3.82	1.05	4.00
Documentation errors are a major cause of delays	60	3.65	1.10	4.00
Customs rules and regulations are transparent	60	3.52	1.12	4.00
Electronic customs systems are effective	60	3.48	1.09	4.00
Digital platforms for customs filing are user-friendly	60	3.85	1.15	4.00
Automation has improved customs procedures	60	3.72	1.06	4.00
Customs procedures require improvement	60	4.12	0.95	4.00

Table 1: Descriptive Statistics of Key Perception Items (N = 60)

The descriptive analysis reveals that respondents perceive customs clearance as moderately efficient (Mean = 3.42). Delays are frequently reported (Mean = 3.82), and documentation errors are widely acknowledged as a primary cause (Mean = 3.65). Notably, digital platforms for customs filing received comparatively higher appreciation (Mean = 3.85), and there is strong consensus that customs procedures require further improvement (Mean = 4.12). These findings indicate a system that has made measurable progress through digitalization yet retains significant procedural inefficiencies.

4.2 Chi-Square Test

A Chi-square test of independence was conducted to examine whether a statistically significant association exists between respondents' gender and their preferred mode of transport for shipments.

Null Hypothesis (H_0): There is no significant association between gender and mode of transport used.
Alternative Hypothesis (H_1): There is a significant association between gender and mode of transport used.

Statistical Measure	Value	Degrees of Freedom	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.437	4	0.077
Likelihood Ratio	8.612	4	0.072
N of Valid Cases	60	—	—

Table 2: Chi-Square Test — Gender vs. Mode of Transport

Interpretation: The Pearson Chi-square value is 8.437 with 4 degrees of freedom, yielding a significance value of $p = 0.077$. Since $p > 0.05$ (at the 5% significance level), we fail to reject the null hypothesis. This indicates that there is no statistically significant association between gender and the preferred mode of transport among respondents. The result suggests that mode of transport selection in customs operations is driven by operational and cargo-specific factors rather than the respondent's gender. Descriptively, sea transport was most frequently used (43.3%), followed by multimodal transport (30%), reflecting Chennai's port-centric trade environment.

4.3 Independent Samples t-Test

An Independent Samples t-Test was conducted to determine whether male and female respondents differ significantly in their perception of the user-friendliness of digital platforms for customs filing (Questionnaire Item 13).

Null Hypothesis (H_0): There is no significant difference between male and female respondents in their perception of digital platform user-friendliness.

Group	N	Mean	Std. Deviation	Std. Error Mean	Median	Range
Male	35	3.943	1.136	0.192	4.00	1–5
Female	25	3.720	1.173	0.235	4.00	1–5

Table 3: Descriptive Statistics by Gender — Digital Platform User-Friendliness

Test	t	df	Sig. (2-tailed)	Mean Diff.	Cohen's d
Equal variances assumed	0.739	58	0.463	0.2229	0.194 (Small)
Mann-Whitney U (non-parametric)	U = 488	—	0.433	—	—

Table 4: Independent Samples t-Test Results

Interpretation: Levene's Test for Equality of Variances yielded $F = 0.104$, $p = 0.748$, confirming that equal variances can be assumed. The t-statistic is $t(58) = 0.739$ with a two-tailed significance of $p = 0.463$. Since $p > 0.05$, we fail to reject the null hypothesis. There is no statistically significant difference in the perception of digital platform user-friendliness between male ($M = 3.943$, $SD = 1.136$) and female ($M = 3.720$, $SD = 1.173$)

respondents. Cohen's d of 0.194 indicates a small and practically negligible effect size. The non-parametric Mann-Whitney U test ($U = 488$, $p = 0.433$) corroborates this finding. Both genders similarly appreciate digital customs filing platforms, suggesting that technology adoption is gender-neutral among customs professionals.

5. FINDINGS AND SUGGESTIONS

5.1 Findings

The main things we found out from looking at the data are:

- * Most of the people who answered our questions are professionals who are just starting their careers in the customs and logistics sector. They are mostly between 20 and 30 years old. Have been working for 1 to 3 years.
- * A lot of the people who answered our questions work for freight forwarders. They mostly use sea transport to move goods around. This makes sense because Chennai is a city with a port.
- * More than half of the people who answered our questions think that customs procedures are okay, but not great. A lot of people also said that there are still some problems with the way things are done.
- * It usually does not take long to get goods through customs but 65 percent of the people who answered our questions said that delays happen a lot. This is a problem that needs to be fixed.
- * Most people said that mistakes with paperwork are the reason why goods get delayed in customs. This shows that there are some problems with the way paperwork is done.
- * People seem to like using platforms and electronic customs filing systems. They think these systems make things more efficient.
- * However, we are not using technology well as we could be. The systems are not always reliable. People need more training on how to use them.
- * People are somewhat happy with how clear the rules are, but exporters are more confident than importers.
- * We looked at the data. Found that whether you are a man or a woman does not affect what kind of transport you choose.
- * We also found that whether you are a man or a woman does not affect how easy you think digital platforms are to use.
- * Almost everyone agrees that customs procedures need to be improved. This shows that the people who use these services are not happy, with how things are being done.

5.2 Suggestions

Based on findings, the following suggestions were made for people who make policies customs officials, CHA companies and logistics players:

- Make Documentation More Accurate:** Use templates to check documents before they are filed create lists of things to check and use computer programs to find mistakes. This can help reduce errors.
- Make Digital Systems Better:** Improve the ICEGATE and EDI systems so they are more reliable and can track shipments in time. These systems should also work well with computer programs that assess risks.
- Do Targeted Inspections:** of checking every shipment use intelligence to decide which ones to inspect. This can help reduce delays without compromising safety and compliance.
- Make Rules Clearer:** Write guides on tariffs, duties and procedures. These guides should be easy to understand and available online in languages.
- Have One Stop Clearance:** Make it possible for customs, ports and regulatory agencies to work together seamlessly. This can help reduce delays.
- Train People** Hold regular training sessions for CHA professionals and customs officials.

These sessions should cover regulations, digital tools and compliance standards.

- Get Feedback:** Create a system for importers and exporters to give feedback on procedures.

This can help identify areas for improvement.

- Be Transparent About Costs:** list all costs, including duties, fees and penalties. This can help reduce confusion and complaints, among trade stakeholders.

6.CONCLUSION

This study looked at how well customs procedures work for import and export trade. It asked 60 logistics professionals for their thoughts. The study used statistics, Chi- tests and Independent Samples t-Tests to get a complete picture of how things work. The study found that customs procedures in India have gotten a lot better with digitalization the use of Electronic Data Interchange systems and changes in policies like assessment. People like using filing platforms and automation has made things faster and more transparent. Men and women both think digital tools are useful so they are used by everyone in the customs workforce.

There are still some problems that need to be fixed. Things like delays, mistakes in paperwork and lack of transparency are still issues. Exporters think the procedures are better than importers do and the actual performance is not what people expect. Most people think things need to get better. Customs House Agents are important in fixing these problems. They are good at managing paperwork following rules and working with groups. This helps reduce mistakes avoid penalties and get cargo cleared faster. So, it is crucial to help Customs House Agents get better with technology and training. In the end a good customs system needs digital infrastructure, skilled workers, simple rules and good coordination between agencies. If India fixes the problems, with paperwork makes digital systems better.

Declaration of Conflicting Interests

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