Customs House Agents Perspective on Effectiveness of Container Freight Stations, Chennai

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***Abstract*-- A key factor in determining the trade volume is the efficiency of the cargo handling capacity of the ports. Container Freight Stations forms a major infrastructural component which primarily contributes to the decongestion of ports at the terminals. It is considered as an extension of department of customs. As India has improved its trade environment, development of ports, the volume of trade has increased over the years. The containerization of cargo has increased the role of CFS in India. CFS are the integral part of the EXIM supply chain. Custom House Agents and importers have some grievances such as the delay in the movement of cargo which would in turn increase the demurrage incurred on the importers, lack of infrastructure facilities, modern container handling equipment. India's EXIM trade is fast growing and for managing and sustaining the growth, it is very essential to enhance the infrastructure facilities, modern cargo handling equipment. The purpose of the study is to analyse the important criteria in the selection of a CFS, the association of problems and satisfaction of the Customs house agents. SPSS 21 is used to perform the MANOVA, ANOVA and Correlation analysis. The results revealed that there is a significant effect of number of shipping bills on location, safety and quick clearance, difference of opinion on satisfaction between importers and exporters and a negative association between the problems in the CFS and satisfaction. The study also identified that quick clearance, modern cargo handling equipment's and location are the major criteria in the selection of the CFS.**

Keywords: *Container Freight Stations, Customs House Agent, EXIM, CHA, LOGISTICS FIRMS.*

1. Introduction

A CFS is a facility to help port decongestion by shifting the cargo to a place outside the port area to carry out customs related activities. The procedures of customs and the space constraint at ports, has led to the idea of CFS. Logistics firms set up CFS near the ports after getting license from the government. Any business requires the services of CFS during their import and export process.

CFS plays a crucial role in import and export of cargo. Its main responsibility is to keep the cargo safe and secure until they are shipped or picked up. In addition to safety, the cargo need to be sorted properly for the next phase of movement. Chennai has the maximum number of container freight stations (CFSs). There are 28 in operation with three more to be set up soon. The CFSs are located in North Chennai, especially near the industrial zone of Manali, serving both Chennai and Ennore ports. Clearance of goods from a CFS is an important activity for the trade in respect of export/ import cargo as it is the final Customs contact point. In Chennai, the 28 freight stations handle 1.6 million TEUs. However, in Mumbai, only 18 box freight stations cater to traffic of over 3 million TEUs. In Chennai, it costs nearly 25 crores to put up a CFS, which is typically put up over 5-10 acres. In Mumbai, however, the CFSs are spread across 20-30acres and are better equipped than the stations in Chennai. Numerous studies have been conducted to determine the challenges in the ports, only very few studies have been done with respect to CFS. The objective of the study is to evaluate the criteria considered by the CHA in the selection of CFS, the problems prevailing in the CFS, and its association with satisfaction.

2. Review of Literature

Customer Freight Stations:[1] Customs Manual (2015) by CBEC has defined CFS as "A common user facility with public authority status equipped with fixed installations and offering services for handling and temporary storage of import/export containers carried under Customs transit by any applicable mode of transport placed under Customs control. All the activities related to clearance of goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and

outright export, transhipment, take place from such stations."

Customs House Agent: In India, the CHA is defined as a licensed agent who enables the transactions of any business relating to the import or export of goods at the customs station. A CHA acts on behalf of importer or exporter. CHA files bill of entry, submitting required documents, examination of goods, paying duty on behalf of the principal, warehousing of goods. CHA is treated as the owner of import or export goods.

The most important problem is the delay in the movement of containers from the port to CFS. When the containers are offloaded they are stored in the yard from where the CFS trailers has to pick up the containers, the containers are allowed in the yard for 3 days and after that demurrage is levied upon the CHA. The delay of the CFS trailer is due to the late movement of TTs (tractor trailers) from the CFS, congestion at the ports, and lack of adequate number of TTs, lack of modern container handling equipment at the CFS. Moreover, there are inadequate CFS that works 24/7, which may be due to the lack of customs officers to work in shifts, lack of manpower and machine power at the CFS. There is also a time limit for payment, the payments are accepted before 8 p.m. The importers are allowed to pick up the containers after paying the Delivery order charges and freight charges to the shipping lines. Once payment of DO is done, the importer had to collect the hard copy of the delivery order from the shipping line. The electronical generation of delivery order would reduce the delay and reduce the complexities of the procedure. [2] States that lack of storage space is a major problem faced by ports which leads to congestion in the ports. The inefficiencies of CFS is due to the inaccurate ETA, inaccurate loading and discharging information, late submission of plans by lines. For resources, such as the berths, quay cranes, and storage space, the allocation of the resources has already been completed in the preceding planning stage, but the final commitment and detailed decisions on the assignment of resources are usually made in real time. For resources, such as prime movers, yard cranes, and manpower, detailed operational schedules can only be developed for a very short-term planning horizon, most often only for a few minutes, because the dynamic nature of the terminal operations and frequently occurring disturbances do not allow for comprehensive scheduling of future operations. Therefore, the assignment of resources to tasks must be made in real time. Containers, are the steel boxes of sizes 20 feet, 30 feet, 40 feet etc. The most commonly used are 20 and 40 feet. They can be stacked, a two-high stack is called the double stack. According to [3] the containers are designed in such a way keeping in mind that these moves through various mode of transports like sea, rail. The container handling equipment's plays a major role in CFS, these include transtainers to enable transfer to other modes, Gantry Cranes and Grappler lift for quick transfer of containers, reach stackers to stack container on top of each other.

[4] in his article states that, better infrastructure can boost productivity at container freight stations. [5] Says that to reduce the time of container laid at the CFS, it is necessary of other facilities such as warehouses, cargo handling equipment such as cranes. For exports, the CHA based in the local country would move the cargo through rail or truck to the CFS to stuff the container [6]. The container is unpacked for customs examination and then repacked sealed and then transferred to the container yard [7]. The CFS that can perform these tasks quickly will reduce the dwell-time of containers. The level of automation, adoption of technology, design facilities and motivation of employees would enhance the performance of a CFS which has been proved by [8], [9]. The port and container yard productivity has improved among Australia, Singapore, New Zealand and China due to the enhanced capital input management, progressing technologically. Nathan Associates report [10] has explained that the CFS that are well equipped will have shorter dwell time and are efficient to handle more volume of cargo. [11] Study on the documentation and operation process of the CFS proved that it is very much important to improve the speed of the documentation process and necessary to install a mobile scanner to the containers to reduce the stuffing and de stuffing cost and time.

3. Methods and Materials:

This study is a descriptive research. The researcher attempts to find the factors that influence the selection of CFS, problems prevailing in CFS and the satisfaction of the CHA. The sampling method applied is a convenient sampling which comprises of importers and exporters in Chennai. The sample size is 40. 20 of which are importers and 20 are exporters. Some of the company who overtakes both import and export activities were asked to consider their major activity before filling the questionnaire. SPSS 21 was used for the analysis. Cronbach alpha test was done to check the reliability of the questionnaire. The reliability test yielded 0.868 which confirm that the instrument is reliable. The first part of the questionnaire consisted of demographic information and the second part

consisted of questions related to the criteria in selection of CFS, problems in CFS and satisfaction of the CHA.

Hypothesis:

$H1_0$: There exists no significant effect of the number of shipping bills on location, safety and quick clearance.

$H2_0$: There is no significant association between types of problems in CFS and satisfaction

$H3_0$: There exists no significant difference among importer and exporter on satisfaction.

4. Results and Discussions:

4.1 Effect of the number of shipping bills on location, safety and quick clearance process.

Table 1. Multivariate test on the effect of number of shipping bills

Effect		**Value**	**F**	**df**	**Parameter**	**Observe Power[d]**
Intercept	Pillai's Trace	.96	274.37[b]	3	823.11	1.000
	Wilks' Lambda	.03	274.37[b]	3	823.11	1.000
	Hotelling's Trace	24.94	274.37[b]	3	823.11	1.000
	Roy's Largest Root	24.94	274.37[b]	3	823.11	1.000
SB	Pillai's Trace	.98	4.30	12	51.67	.999
	Wilks' Lambda	.24	5.07	12	51.93	.999
	Hotelling's Trace	2.15	5.67	12.	68.10	1.000
	Roy's Largest Root	1.68	14.74[c]	4	58.98	1.000

Table 2. Test of between location, safety and quick clearance.

Source	DV	Type III Sum of Squares	df	Mean Square	F	Sig.	Power[d]
Corrected Model	L	22.19[a]	4	5.54	3.75	.012	.84
	S	35.18[b]	4	8.79	7.34	.000	.99
	QC	24.78[c]	4	6.19	8.63	.000	.99
Intercept	L	297.71	1	297.71	201.22	.000	1.00
	S	336.86	1	336.86	281.27	.000	1.00
	QC	382.58	1	382.58	533.12	.000	1.00
SB	L	22.19	4	5.54	3.75	.012	.84
	S	35.18	4	8.79	7.34	.000	.99
	QC	24.78	4	6.19	8.63	.000	.99
Error	L	51.78	35	1.48			
	S	41.91	35	1.19			
	DT	25.11	35	.71			
Total	L	571.00	40				
	S	610.00	40				
	DT	674.00	40				
Corrected Total	L	73.97	39				
	S	77.10	39				
	DT	49.90	39				

(L-location, S-safety, QC-quick clearance, DT-less dwell time).

MANOVA is a multivariate analysis done to study the data that consists of more than two dependent variables. SPSS 21 is used to perform this analysis. Multivariate analysis is done to analyse the significant effect of the number of shipping bills on the criteria such as location, safety and quick clearance. We can see from the above table that the $p<0.05$ and Wilks Lamada is 0.247. This proves that there exists a statistical significant difference in the location, safety and quick clearance aspects based on the number of shipping bills. The number of shipping bills has significant effect on location with $F(4,35)=3.750$, $p<0.0005$, safety with $F(4,35)=7.344$,$p<0.0005$, quick clearance with $F(4,35)=8.634$, $p<0.0005$.

4.2 Association between types of problems in CFS and satisfaction

Table 3. Correlations between problems and satisfaction

		T	D	DTR	LI	SAT
T	Pearson Correlation	1	-.535**	.084	.63**	-.49**
	Sig. (2-tailed)		.000	.607	.000	.00
D	Pearson Correlation	-.535**	1	.03	-.488**	.323*
	Sig. (2-tailed)	.000		.83	.001	.042
DO	Pearson Correlation	.084	.033	1	-.035	-.243
	Sig. (2-tailed)	.607	.837		.829	.131
LI	Pearson Correlation	.631**	-.488**	-.035	1	-.768**
	Sig. (2-tailed)	.000	.001	.829		.000
SAT	Pearson Correlation	-.491**	.323*	-.243	-.768**	1
	Sig. (2-tailed)	.001	.042	.131	.000	
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

(DTR- Delay in transit, D-damages, T-theft, DO- delay in operation, LI- lack in infrastructure, SAT- satisfaction)

The above table states that the lack of proper infrastructure facilities in the CFS is highly associated with the Satisfaction. The negative sign states that the strength of association is negative. Moreover, it states that the lack of infrastructure facility is more associated with Satisfaction than the other problems prevalent in the CFS. Even though the most prevalent problem in the CFS is damage to the cargo, it is not associated with the satisfaction. Improving the infrastructure facilities would enhance the satisfaction. The strength of association between the Infrastructure facilities and satisfaction is 58.9%, theft and satisfaction is 24%, delay in transit and satisfaction is 5%, damages and satisfaction is 10%.

4.3. Difference among importer and exporter on satisfaction

Table 4. Descriptive-Importer and exporter

	Mean	SD	SE	95% Confidence Interval for Mean		MIN	MAX
				Lower Bound	Upper Bound		
importer	3.25	1.37	.306	2.60	3.89	1.0	5
exporter	4.30	.80	.179	3.92	4.67	3.0	5
Total	3.77	1.22	.194	3.38	4.16	1.0	5

Table 5: ANOVA - type of shipper and satisfaction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.025	1	11.025	8.737	.005
Within Groups	47.950	38	1.262		
Total	58.975	39			

One- way Anova is done to find if there exists a significant difference among the importer and exporter on satisfaction. From the above table we can see that the value of p value is 0.005 which is less than 0.05 and hence it is significant. So, the null hypothesis is rejected and hence there exists a significant difference among the importers and exporters on the satisfaction factor.

4.4. Ranking of criteria factors that influence in selection of the CFS

Table 6. Descriptive Statistics of criteria in selection of CFS

	N	MIN	MAX	Mean	SD
Location	40	1.00	5.00	3.5250	1.37
Cargo handling equipment's	40	1.00	5.00	3.6500	1.33
Customs	40	1.00	5.00	2.7750	1.29
Safety	40	1.00	5.00	3.6500	1.40
Quick clearance	40	1.00	5.00	3.9500	1.13
Valid N (listwise)	40				

The shippers consider the quick clearance that is less dwell time of the container at the CFS as the most important criteria as this criterion has the highest mean, followed by the safety of the goods criteria and the availability of the modern equipment's to speed the process. And the least important criteria from the shipper's point of view is the favourable by customs criteria. This analysis would help the CFS provide better service by improving these criteria that would better satisfy the shipper's need.

4.5. Ranking of problems prevailing in the CFS.

Table 7. Descriptive Statistics of problems in CFS

	MIN	MAX	Mean	SD
Theft	1.00	5.00	2.22	1.22
Damages	1.00	5.00	3.75	1.27
delay in operation process	1.00	5.00	2.97	1.04
lack of proper infrastructure facilities	1.00	5.00	2.25	1.21
Valid N (listwise)				

According to the shippers, the most prevailing problem in the CFS is damage to the cargo, the next is the delay in the transit which might be due to the poor knowledge of the staff, lack of proper scheduling of consignments which in turn would increase the demurrage and other charges to the shipper. Also, the lack of proper facilities in the CFS would also be a reason for the delay and would incur a huge cost on the shipper. The theft problem can be reduced by fixing more number of modern surveillance cameras. CFS can provide better service by eliminating these problems.

5. Conclusions

The study has revealed that quick clearance, the presence of modern cargo handling equipment, safety are the more important factors, the Customs House Agents consider in the selection of Container Freight Stations. The problems such as damages, theft and delay in the operation process have been identified which can be reduced by improving the infrastructure facilities, more automation, installation of surveillance cameras, increasing the number of staff in the CFS which enables 24/7 operation in the CFS would speed up the operation process. Moreover, there exists association between the factors that influence the CHA in selection of the Container Freight station and the lack of infrastructure facilities is highly correlated with the satisfaction of the CHA. The Container Freight stations play a vital role in supply chain, it is highly important to improve the operation and handling quality in the CFS to withstand the growth of trade in India.

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