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TRAFFIC PERFORMANCE OF SELECTED MAJOR PORT TRUSTS IN INDIA

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ABSTRACT

Ports are the center point for the international and national sea transport. So, ports must improve their traffic performance to improve their working and gaining profits. Indian ports offer excellent services to vessel operators by providing ideal infrastructure depending on predicted vessel type and cargo handling. The performance metrics of the selected port trusts include its traffic performance. These parameters and port performance indicators are highly interconnected. In the present paper, an attempt has been made to find out whether there is any improvement by the selected port trust during the study period in terms of total traffic handled, export and import traffic (in Million tonnes). Five major ports have been selected for the study i.e. Jawaharlal Nehru Port Trust (JNPT), Mumbai Port Trust (MbPT), Deendayal Port Trust (DPT), Visakhapatnam Port Trust (VPT) and Syama Prasad Mookerjee Port Trust (SMP). The export traffic handled was highest for DPT and it was lowest in SMP during the study period. The import traffic handled was highest for DPT and it was lowest in JNPT during the study period. The difference among the total traffic handled by the selected port trusts is found significant.

Keywords: Traffic Performance, Export, Import, Port Trust.

INTRODUCTION

There are major and minor ports exist in India. This is determined by the governing authority rather than the scale of the enterprise. The Ministry of Ports, Shipping and Waterways oversees all major ports. Non-major ports are those ports that operate under the auspices of state maritime bodies or state governments. The Tariff Authority for Major Ports (TAMP), which governs vessel and cargo tariffs as well as leasing rates for major port trust assets, is responsible for those within the Ministry's jurisdiction. India has a 7,517-kilometer shoreline (on the western and eastern sides of the main land and the islands), with 12 major ports and over 200 minor ports (only 65 operational). The Indian marine industry is undesirable to international business because of low productivity and wasteful processes and procedures. The Indian government has created and implemented several programs for port development, including upgrading of port infrastructure and the employment of cutting-edge technology.

The major commodities handled by Indian ports are POL& Crude Products, Iron Ore, Fertilizer, Food grains, Coal etc. The total traffic is divided in different categories i.e. Dry Bulk, Liquid Bulk, Break Bulk and Containers.

The objective of this paper is to analyze the traffic performance of selected major port trusts in India.

REVIEW OF LITERATURE

Chudasama, K. M. (2009) revealed that "in the era of globalization with the expansion in world trade, the volume of cargo traffic at Indian ports is also expanding significantly. Indian ports would require significant improvement in port performance with the increasing cargo volume at ports. The operational efficiency and physical capacity collectively determine the performance of a port. This paper analyses the performance of Indian major ports for the year 2007. The Weighted Score Method has been adopted for ranking major Indian ports. The weights are derived from the factor loadings of the Principal Component Analysis. On the basis of operational performance indicators and physical facilities indicators, the ranking for major Indian ports has done. The paper also provides feedback to the ports about its status and ongoing improvement strategies."

Mandal, Roy Chowdhury & Biswas (2016) examined "the performance of 13 major ports of India in respect of key operational performance indicators. Following rapid economic growth India's share in international trade is escalating. This puts increased pressure on these ports, which handle a substantial portion of the trade to perform with optimal efficiency. The study presents a systematic analysis of different performance indicators for a ten-year time period (2003 to 2013) using a variety of statistical methods and evaluates status of each port in different categories of performance. This will enable the ports to gauge their own effectiveness and appraise reasons for their shortcomings. In this context, the work further develops an integrated composite performance index by relegating comparative weightages to different indicators, to assess the relative overall performance of different ports. The study underlines the need of such estimates to adjudge the consistency of performance, internal and across ports to enable planning and development of measures for enhanced performance."

Sengar, Garg & Raju (2018) revealed that "the ports are forced to think beyond their traditional business ideology of growing in economic dimension only. Rather they are required to grow economically in balance with social progress and remain environment friendly. This provides a scope to identify a sustainable framework and factors associated to it, with respect to a port. This study tries in this direction and identifies the critical factors for sustainable initiatives in Indian sea ports. This work uses AHP framework to evaluate the sustainable initiatives and identifies that for a port; environment dimension should be prioritise over social and economic dimension to attain sustainability. Similarly economic dimension should be considered after social dimension while developing a sustainable framework. Additionally, the study also concludes that out of 14 sub factors used for study, 'functional environmental management system' is most important one and 'port infrastructure development scheme/fund' is least considered sub factor".

RESEARCH METHODOLOGY

For the purpose of this paper the secondary data is gathered from the administrative report of selected major port trusts for this paper. The period of the study for this research work is from 2016-17 to 2020-21. Five major port trusts have been selected for the study i.e. Jawaharlal Nehru Port Trust (JNPT), Mumbai Port Trust (MbPT),

Deendayal Port Trust (DPT), Visakhapatnam Port Trust (VPT) and Syama Prasad Mookerjee Port Trust (SMP). For the purpose of measuring the traffic performance of selected major port trusts three variables i.e. total traffic handled, export & import wise traffic handled is used. Export and Import traffic handeld by the selected port trusts are shown in table and charts for better understanding. For the purpose of data analysis as for the competitive nature ANOVA test is applied using SPSS Software to total traffic handled by selected major port trusts.

DATA ANANLYSIS

The data collected from the administration report of the selected major ports are analyzed as follows:

TABLE 1: EXPORT TRAFFIC HANDLED BY SELECTED MAJOR PORT TRUST IN INDIA

(In Million Tonnes)

	JNPT	MbPT	DPT	VPT	SMP
2016-17	26.86	20.32	23.85	22.78	13.96
2017-18	28.32	20.35	28.4	21.74	15.54
2018-19	30.9	18.32	30.12	20.49	14.53
2019-20	29.71	18.83	33.93	24.34	16.45
2020-21	28.75	17.38	35.24	30.08	16.08
Average	**28.91**	**19.04**	**30.31**	**23.89**	**15.31**

Source: Administration report of the selected major port trusts.

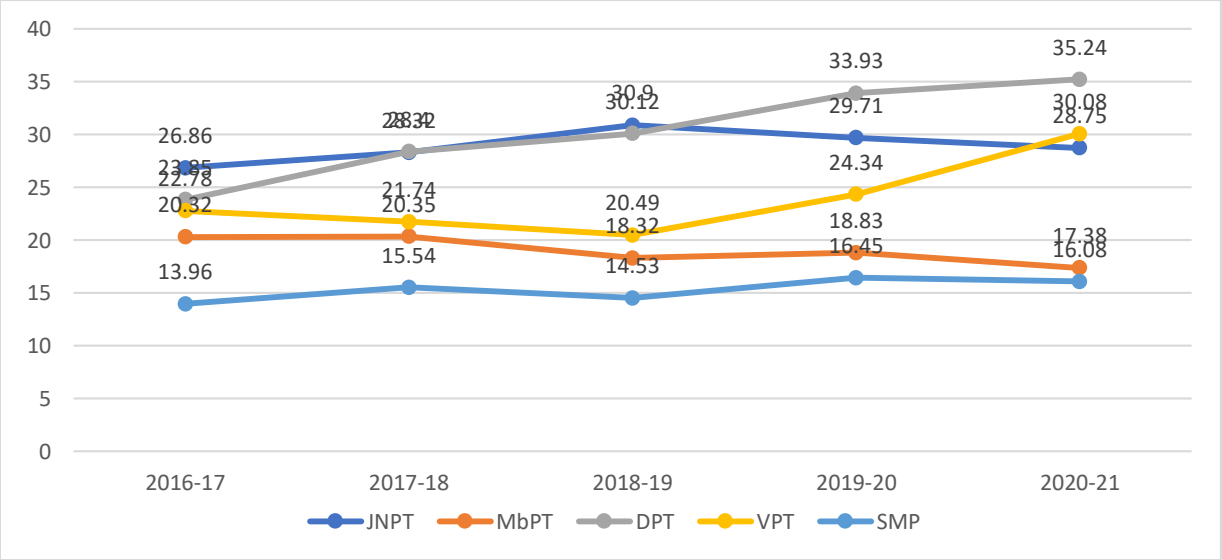

Figure 1: Export traffic handled by selected major port trusts.

As per the above table and figure, the export traffic handled for JNPT was increasing continuously till 2018-19 after that it was declined in 2019-20 and 2020-21. It was 26.86 million tonnes in 2016-17 and increased to 28.75 million tonnes in 2020-21. In MbPT, the export traffic handled was fluctuating continuously during the study period. It varies between 20.32 million tonnes and 17.38 million tonnes. For DPT, total export handled was increasing continuously during the study period. The export traffic handled for DPT was 23.85 million tonnes in 2016-17 and 35.24 million tonnes in 2020-21. The export traffic handled for VPT was 22.78 million tonnes in

2016-17 and then it was increased to 30.08 million tonnes in 2020-21. Further, SMP has shown fluctuating trend in export traffic handled.

The export traffic handled was highest for DPT and it was lowest in SMP during the study period.

TABLE 2: IMPORT TRAFFIC HANDLED BY SELECTED MAJOR PORT TRUST IN INDIA

(In Million Tonnes)

	JNPT	MbPT	DPT	VPT	SMP
2016-17	34.84	42.73	81.22	36.33	36.99
2017-18	36.96	42.48	81.14	40.49	42.35
2018-19	38.98	42.27	84.76	43.73	49.23
2019-20	37.28	41.86	86.29	46.32	47.54
2020-21	34.32	35.94	81.23	38.73	45.29
Average	**36.48**	**41.06**	**82.93**	**41.12**	**44.28**

Source: Administration report of the selected major port trusts.

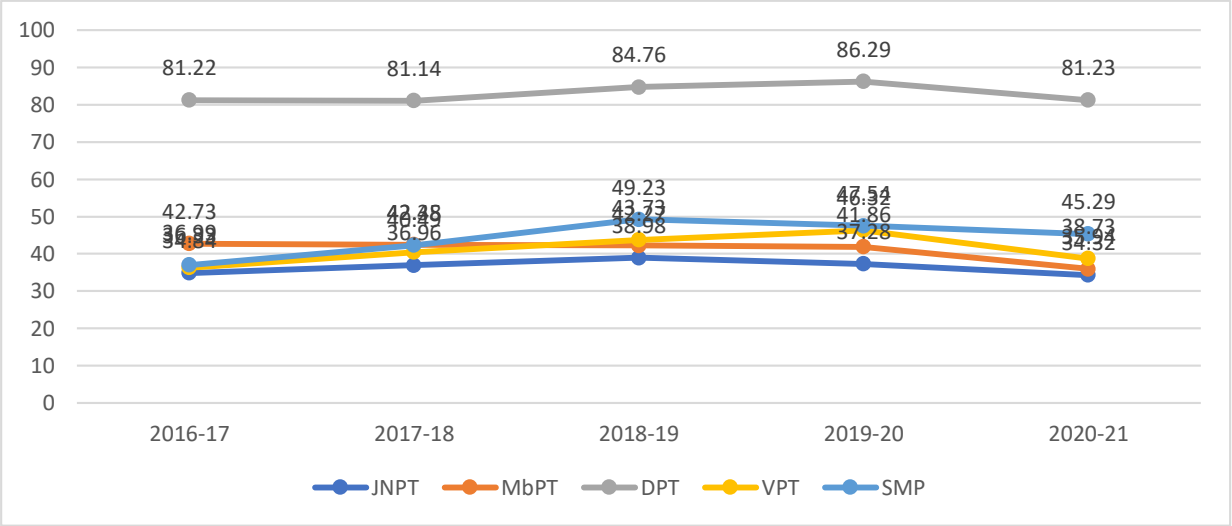

Figure 2: Export traffic handled by selected major port trusts.

As per the above table and figure, the import traffic handled for JNPT was increasing continuously till 2018-19 after that it was declined in 2019-20 and 2020-21. It was 34.84 million tonnes in 2016-17 and decreased to 34.32 million tonnes in 2020-21. In MbPT, the import traffic handled was decreasing continuously during the study period. It varies between 42.73 million tonnes and 35.94 million tonnes. For DPT, total import handled was fluctuating continuously during the study period. The import traffic handled for DPT was 81.22 million tonnes in 2016-17 and 81.23 million tonnes in 2020-21. The import traffic handled for VPT was 36.33 million tonnes in 2016-17 and then it was increased to 38.73 million tonnes in 2020-21. Further, SMP has shown fluctuating trend in import traffic handled.

The import traffic handled was highest for DPT and it was lowest in JNPT during the study period.

TABLE 3: TOTAL TRAFFIC HANDLED BY SELECTED MAJOR PORTS

(In Million Tonnes)

	JNPT	MbPT	DPT	VPT	SMP
2016-17	62.15	63.05	105.44	61.02	50.95
2017-18	66	62.83	110.1	63.54	57.89
2018-19	70.71	60.59	115.4	65.30	63.76
2019-20	68.45	60.69	122.61	72.72	63.98
2020-21	64.84	53.32	117.57	69.84	61.36
Mean	**66.43**	**60.09**	**114.22**	**66.48**	**59.59**

Source: Administration report of port trusts under study.

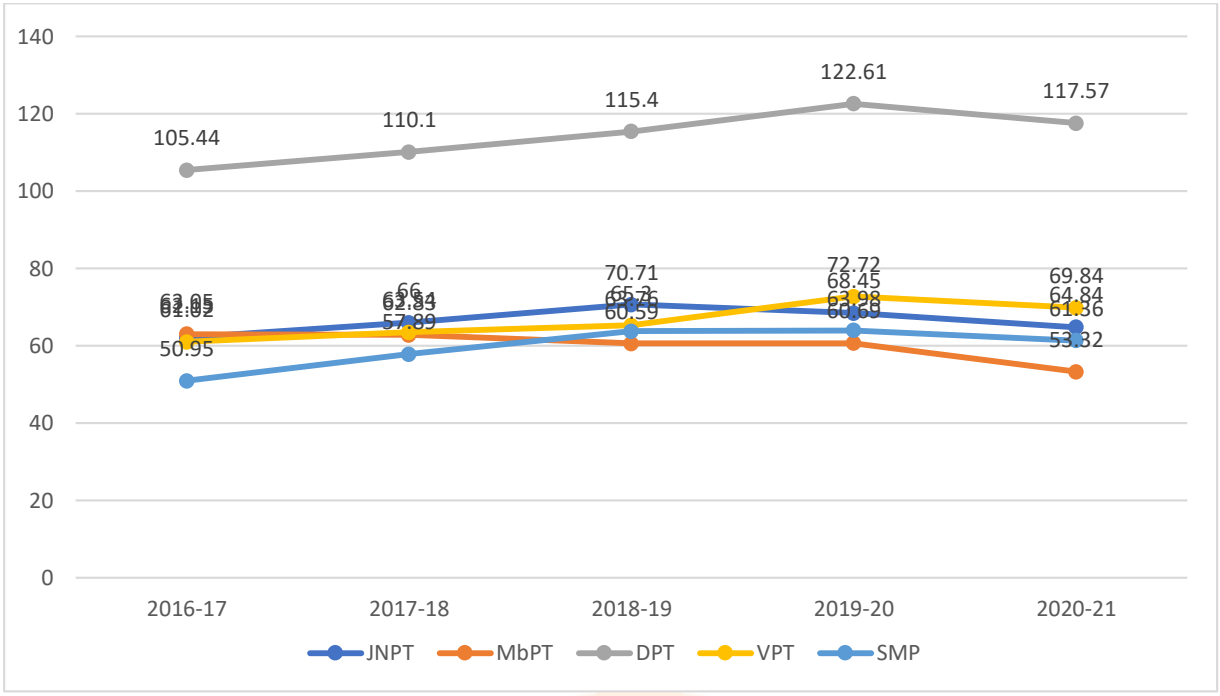

Figure 3: Total traffic handled by selected major ports

As per the above table and figure, the total traffic handled for JNPT was increasing continuously till 2018-19 after that it was declined in 2019-20 and 2020-21. It was 62.15 million tonnes in 2016-17 and increased to 64.84 million tonnes in 2020-21. The average traffic handled in JNPT was 66.43 million tonnes with standard deviation 3.29. In MbPT, the total traffic handled was decreasing during the study period. It varies between 53.32 million tonnes and 63.05 million tonnes. For DPT, total traffic handled was increasing continuously except 2020-21. The total traffic handled for DPT was 105.44 million tonnes in 2016-17 and 122.61 million tonnes in 2020-21. Total traffic handled for VPT was 61.02 million tonnes in 2016-17 and then it was increased to 69.84 million tonnes in 2020-21. The average traffic handled in VPT was 66.48 million tonnes with standard deviation 4.75. Further, SMP has shown increasing trend in total traffic handled except 2020-21. Average traffic handled for SMP was 59.59 million tonnes with standard deviation 5.42.

The total traffic handled was highest for DPT and it was lowest in SMP during the study period.

Further, the same is being measured for the purpose of difference among port trusts selected, for this purpose following hypothesis is developed:

H1= There is a significant difference among the total traffic handled by the selected port trusts.

For the purpose of analysing the data and making a comparison among the selected port trusts, the ANOVA test with SPSS software is used and the results are as under:

Table 4

ANOVA: Total traffic handled by selected major ports

	Sum of Square	DF	Mean Square	F Ratio	Sig.
Between Groups	10653.862	4	2663.465	108.575	<.001
Within Groups	490.620	20	24.531		
Total	11144.482	24			

F ratio = 108.575

Critical F at 5% significant level for df (4,20) = 2.87

Conclusion: The above ANOVA table reveals that the computed F value is higher than the critical F value. So, the null hypothesis is rejected here and the difference in total traffic handled of the selected port trusts is significant.

CONCLUSION

In this paper we have analyzed the export traffic, import traffic and total traffic handled by the selected major port trusts. The export traffic handled was highest for DPT and it was lowest in SMP during the study period. The import traffic handled was highest for DPT and it was lowest in JNPT during the study period. Further the result of ANOVA test revealed that the total traffic handled by selected major port trusts has shown significant differences among them. Total traffic handled was highest for DPT and it was lowest in SMP.

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