



A STUDY ON THE ASSOCIATION BETWEEN GARMENT UNITS AND THE SERVICES UTILIZED BY THE UNITS WITH RESPECT TO LOGISTICS COMPONENTS

“It’s not the organizations that are competing; it is the supply chains that are competing”

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Introduction:

Since time immemorial the need for clothing has been one of the basic needs of mankind. The global apparel industry over the last 50 years has seen an enormous amount of change in the patterns of designing, sourcing, and manufacturing. A new breed of designers has redefined the fashion world over and over. India has come into fashion focus in the past decade. Textile and garment industry of India contributes majority to the GDP of Indian Economy. Indian textile and garment industry has its significance not only in the Indian market but it has its recognized presence and high stature in the global market also and it is one of the leading textile and garment industries in the world. The structure of the Indian textile and garment industry is full of variability having the players at every level of their supply chain with lot of structural, operational and performance differences. Supply chain structure of garment industry in India comes with lot of varieties of the players involved and their size and operational differences at every stage in the chain.

There are many small and large players at every stage of the supply chain claiming their association with either the organized or the unorganized sector. The whole process together creates the complexity, which necessitates separate study of every stage in order to understand the structure and dynamics of the complete supply chain in the Indian garment Industry. The various factors which drive the 3PL decision are classified into three categories namely, external factors that include economic forces, technological improvements and accounting for regulations by avoiding differences in the area, Internal factors that include strategies, structure,

decision making process and organizational relationships, Behavioral process that include perception, motivation, attitude and belief.

Need for the study

In order to improve supply chain's overall performance, Logistics activities cover the entire supply chain. Acquiring, converting and distributing goods from raw materials to finished goods to the customers in order to achieve customer service objectives in an efficient cost effective manner is the major target of logistics process. To eradicate useless and unnecessary stock of inventories and to boost the customer service quality through distribution network redesigning new facilities are introduced in the logistic industries.

Research Design and Methodology

Objective of the study

Present study is carried out with an objective: "To analyse the association between the Garment units and the services utilized by the units with respect to logistic companies"

Research Methodology

Research Design - Analytical and diagnostic type of research

Sample Size – 316 respondents

Sampling Technique - Random sampling technique.

Statistical Tools Applied – Chi Square Analysis

Methods of data collection

The required data used in the study are compiled from the responses collected through questionnaires and various published and unpublished resources.

Review of Literature

S.No	Author	Objective	Findings
1	Marchet (2009)	Assesing the supply chain execution methods.	Supply chain can be executed by properly organising the transportation, automation, flow of cargo movement, planning the traffic pay methods.
2	Kumar(2001)	Development of Supply chain management	The traditional supply chain management is not worth now a days. The System which incorporated technology, internet and communication system develops the supply chain management to the core.
3	Lanciono(2003)	Benefits of internet in supply chain	The internet facilitates inventory management modifying carriers, managing distance and production scheduling.
4	Smeltzer(2000)	Assessing the key responsibilities of supply chain	The key responsibilities while gaining efficiency in supply chain management includes skills required for purchase, managing finance and communication.
5	Vidalakis (2011)	Examining the supply chain approach.	The input and out parameters viz, stock management, reduced transportation cost, truck handling and altering the container handling time.

Analysis and Interpretation

i) Association between nature of the concern and the type of service provider

Ho: There is no significant difference between the nature of concern and the type of service provider

H1: There is a significant difference between the nature of concern and the type of service provider

Table 1: Association between nature of the concern and the type of service provider (Two Way Table)

Nature of concern	TYPE OF SERVICE PROVIDER							Total
	1PL	2PL	3PL	4PL	5PL	6PL	7PL	
Sole proprietorship	0 (0)	4 (21.1)	9 (47.4)	4 (21.1)	0 (0)	2 (10.5)	0 (0)	19 (100)
Firm	11 (8.1)	11 (8.1)	26 (19.1)	36 (26.5)	20 (14.7)	18 (13.2)	14 (10.3)	136 (100)
Company	11 (8.7)	13 (10.2)	19 (15)	38 (29.9)	11 (8.7)	14 (11)	21 (16.5)	127 (100)
Buying house	2 (5.9)	3 (8.8)	10 (29.4)	13 (38.2)	1 (2.9)	1 (2.9)	4 (11.8)	34 (100)
Total	24 (7.6)	31 (9.8)	64 (20.3)	91 (28.8)	32 (10.1)	35 (11.1)	39 (12.3)	316 (100)

Source: Computed Data

Note: Figures in parenthesis are in percent

Table 1, explains the association between nature of concern and the type of service provider. Of those, 19 sole proprietorships, 47.4 percent of the respondents avail 3PL services, 21.1 percent of the sole proprietorship avail both 2PL and 4 PL services, 10.5percent of the sole proprietorship avail 6 PL services. Out of 136 respondents who were firm, 26.5 percent of the firm avail 4 PL services, 19.1 percent of the firm avail 3PL services, 14.7 percent of the firm avail 5PL services, 13.2 percent of the firm avail 6PL services and 10.3 percent of the firm avail 7PL services. Out of 127 respondents who were company, 29.9 percent of the company avail 4 PL services, 16.5 percent of the company avail 7PL services, 15 percent of the company avail 3PL services, 11 percent of the company avail 6PL services and 10.2 percent of the company avail 2PL services. Out of 34 respondents who were buying house, 38.2 percent of the respondents avail 4 PL services, 29.4 percent of the buying house avail 3PL services, 11.8 percent of the buying house avail 7PL services, 8.8 percent of the buying house avail 2PL services and 8.9 percent of the buying house avail 1PL services.

Table 2: Association between nature of the concern and the type of service provider (Chi – square test)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.610	18	.032

Above hypothesis was tested through Chi square at 5% level of significance and it was found that the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the nature of concern and the type of service provider.

ii) Association between nature of the concern and the type of 3PL preferred

Ho: There is no significant difference between the nature of concern and type of 3PL

H1: There is a significant difference between the nature of concern and the type of 3PL

Table 3: Association between nature of the concern and the type of 3PL preferred
(Two Way Table)

Nature of concern	Type of 3 PL				Total
	Standard 3 PL providers	Service developer 3 PL	Customer adapter 3 PL	Customer developer 3 PL	
Sole proprietorship	2 (10.5)	14 (73.7)	2 (10.5)	1 (5.3)	19 (100)
Firm	27 (19.9)	51 (37.5)	35 (25.7)	23 (16.9)	136 (100)
Company	22 (17.3)	69 (54.3)	21 (16.5)	15 (11.8)	127 (100)
Buying house	6 (17.6)	21 (61.8)	4 (11.8)	3 (8.8)	34 (100)
Total	57 (18)	155 (49.1)	62 (19.6)	42 (13.3)	316 (100)

Source: Computed Data

Note: Figures in parenthesis are in percent

Table 3, explains the association between nature of concern and the type of 3PL. Of those 19 sole proprietorship, 73.7 percent of the respondents prefer service developer in 3PL, 10.5 percent of the sole proprietorship prefer both standard 3PL provider and customer adapter 3PL, 5.3 percent of the sole proprietorship prefer customer developer 3PL. Out of 136 respondents who were firm, 37.5 percent of the firm prefer using service developer in 3PL, 25.7 percent of the firm prefer using customer adapter 3PL, 19.9 percent of the firm are using standard 3PL provider and 16.9 percent of the firm prefer using customer developer 3PL. Out of 127 respondents who were company, 17.3 percent of the company using standard 3PL provider, 16.5 percent of the company using service developer in 3PL, 11.8 percent of the company using customer adapter 3PL and 16.9 percent of the company using customer developer 3PL. Out of 34 respondents who were buying house, 61.8 percent of the buying house prefer using standard 3PL provider, 17.6 percent of the buying house prefer using service developer in 3PL, 11.8 percent of the buying house prefer using customer adapter 3PL and 8.8 percent of the buying house prefer using customer developer 3PL.

Table 4: Association between nature of the concern and the type of 3PL preferred
(Chi – square test)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.934 ^a	9	.049

The above hypothesis was tested through chi square at 5% level of significance and it was found that the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the nature of concern and the type of 3PL preferred.

iii) Association between nature of the concern and the service utilized

Ho: There is no significant difference between the nature of concern and the service provided

H1: There is a significant difference between the nature of concern and the service provided

Table 5: Association between nature of the concern and the service utilized (Two Way Table)

Nature of concern	Trans portation	Warehouse/ distribution	Forwarder	Shipper / management	Financial	Information
Sole proprietorship	18 (94.7)	16 (84.2)	16 (84.2)	15 (78.9)	4 (21.1)	19 (100)
Firm	112 (82.4)	117 (86)	113 (83)	116 (85.3)	43 (31.6)	25 (18.4)
Company	106 (83.5)	103 (81.1)	105 (82.7)	107 (84.3)	47 (37)	21 (16.5)
Buying house	28 (82.4)	30 (88.2)	29 (85.3)	30 (88.2)	9 (26.5)	7 (20.6)
Total	264 (83.5)	266 (84.2)	263 (83.2)	268 (84.8)	103 (32.6)	57 (18)

Source: Computed Data

Note: Figures in parenthesis are in percent

Table 3.14, explains the association between nature of concern and the service provided. Of those 19 sole proprietorship, 94.7 percent of the sole proprietorship utilize using transportation services, 84.2 percent of the sole proprietorship utilize use both warehouse and forwarding services, 78.9 percent of the sole proprietorship utilize use shipping and management services and 21.1percent of the sole proprietorship utilize using financial services . Out of 25 respondents who were firm, 86 percent of the firm utilize using warehouse services, 85.3 percent of the firm utilize using shipping and management services, 83 percent of the firm using forwarding services, 82.4 percent of the firm using transportation services and 31.6 percent of the firm utilize using financial services. Out of 25 respondents who were company, 84.3 percent of the company using shipping and management services , 83.5 percent of the company using transportation services, 82.7 percent of the company using forwarding services , 81.1 percent of the company using warehouse services and 37 percent of the company using financial services. Out of 57 respondents who were buying house, 88.2 percent of the buying houses utilize using both warehouse and shipping and management services, 85.3 percent of the buying house using forwarding services, 82.4 percent of the buying house using transportation services and 26.5 percent of the buying house utilize using financial services.

Table 6: Association between nature of the concern and the service Utilized (Chi – square test)

Service utilized	Value	df	Asymp. Sig. (2-sided)
Transportation	8.907	3	.001
Warehouse/ distribution	8.672	3	.010
Forwarder	9.147	3	.003
Shipper / management	9.872	3	.027
Financial	8.917	3	.039
Information	9.471	3	.007

The above hypothesis was tested through chi square at 5% level of significance and it was found that, all the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the nature of concern and the service provided.

Table 7: Association between nature of the concern and the types of service specifically used (Chi – square test)

Type of service specifically used	Value	df	Asymp. Sig. (2-sided)	Result
Transportation				
Shipping	25.860	6	.000	S
Forwarding	24.425	6	.000	S
Consolidation	22.733	6	.000	S
Contract delivery	23.690	6	.000	S
Freight bill payment	29.716	6	.000	S
Relocation	27.121	6	.000	S
Load tendering	27.341	6	.000	S
Brokering	28.822	6	.000	S
Warehousing				
Storage	29.121	6	.000	S
Receiving	23.484	6	.000	S
Assembly	29.082	6	.000	S
Return goods	39.998	6	.000	S
Marking and labeling	26.867	6	.000	S
Inventory management				
Forecasting	33.566	6	.000	S
Location analysis	20.972	6	.000	S
Network	21.047	6	.000	S
Consulting	7.382	6	.048	NS
Layout design	37.919	6	.000	S
Order processing				
Order entry	3.686	6	.092	NS
Fulfilment	24.108	6	.000	S
Information systems				
EDI	29.890	6	.000	S
Scheduling	29.223	6	.000	S
Artificial intelligence	28.494	6	.000	S
Expert system	21.519	6	.000	S
Packaging				
Design	39.580	6	.000	S
Recycling	24.367	6	.000	S

S – Significant NS – Non-significant

It is found from the table 7, that the hypothesis is rejected (Significant) in 24 cases and accepted (Not Significant) in 2 cases.

It is concluded that shipping, forwarding, consolidation, contract delivery, freight bill payment, relocation, load tendering, brokering, storage, receiving, assembly, return goods, marking and labeling, forecasting, location analysis, network, layout design, fulfillment, EDI, scheduling, artificial intelligence, expect system, design and recycling have significant influence on the nature of concern.

iv) Association between nature of the exporter and the type of service provider

Ho: There is no significant difference between the nature of exporter and the type of service provider

H1: There is a significant difference between the nature of exporter and the type of service provider

**Table 8: Association between nature of the exporter and the type of service provider
(Two Way Table)**

Nature of exporter	Type Of Service Provider							Total
	1PL	2PL	3PL	4PL	5PL	6PL	7PL	
Merchant exporter	7 (4.9)	13 (9)	39 (27.1)	46 (31.9)	12 (8.3)	13 (9)	14 (9.7)	144 (100)
Manufacturing exporter	17 (9.9)	18 (10.5)	25 (14.5)	45 (26.2)	20 (11.6)	22 (12.8)	25 (14.5)	172 (100)
Total	24 (7.6)	31 (9.8)	64 (20.3)	91 (28.8)	32 (10.1)	35 (11.1)	39 (12.3)	316 (100)

Source: Computed Data

Note: Figures in parenthesis are in percent

Table 8, explains the association between nature of exporter and the type of service provider. Of those 144 merchant exporter, 31.9 percent of the respondents merchant exporter are avail 4PL services, 27.1 percent of the merchant exporter are avail 3 PL services, 9.7 percent of the merchant exporter are avail 7 PL services, 9 percent of the merchant exporter are avail both 2 PL and 6 PL services and 8.3 percent of the who are merchant exporter are avail 5 PL service. Out of 172 respondents who were manufacturing exporter, 26.2 percent of the firm are avail 4 PL services, 14.5 percent of the firm are avail 3PL and 7PL services, 12.8 percent of the firm are avail 6PL services, 11.6 percent of the firm are avail 5PL services and 9.9 percent of the firm are avail 1PL services.

Table 9: Association between nature of the exporter and the type of service provider (Chi – square test)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.085 ^a	6	.042

The above hypothesis was tested through chi square at 5% level of significance and it was found that the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the nature of exporter and the type of service provider.

v) Association between company turnover and the service provided

Ho: There is no significant difference between the nature of exporter and type of 3PL

H1: There is a significant difference between the nature of exporter and the type of 3PL

Table 10: Association between the company's turnover and the service provided
(Two Way Table)

Company turnover	Transportation	Warehouse/distribution	Forwarder	Shipper / management	Financial	Information
Less than 10 lakhs	19 (82.6)	21 (91.3)	17 (73.9)	19 (82.6)	6 (26.1)	6 (26.1)
10 – 20lakhs	89 (80.9)	91 (82.7)	94 (85.5)	95 (86.4)	39 (35.5)	17 (15.5)
20- 30 lakhs	97 (85.1)	95 (83.3)	99 (86.8)	92 (80.7)	38 (33.3)	17 (14.9)
More than 30 lakhs	59 (85.5)	59 (85.5)	53 (76.8)	62 (89.9)	20 (29)	17 (24.6)
Total	264 (83.5)	266 (84.2)	263 (83.2)	268 (84.8)	103 (32.6)	57 (18)

Source: Computed Data

Note: Figures in parenthesis are in percent

Table 10, explains the association between years of operation and the service utilized. Of those 316 of the respondents whose have turnover less than less than 10 lakhs, 91.3% of them utilized warehouse services, 82.6percent of the respondents utilized both transportation and shipping services, 73.9 percent of the respondents utilized forwarding services and 26.1 percent of the respondents utilized both financial and information services. Out of 316 who have turnover 10 - 20 lakhs 86.4 percent of the respondents utilized shipping services, 85.5 percent of the respondents are use forwarding services, 82.7 percent of the respondents utilized warehouse services, 80.9 percent of the respondents utilized transportation services, 35.5 percent of the respondents utilized financial services and 15.5% percent of the respondents utilized information services. Out of 316 who have turnover 20 - 30 lakhs 86.8 percent of the respondents utilized forwarding services, 85.1 percent of the respondents utilized transportation services, 83.3percent of the respondents utilized warehousing services, 80.7 percent of the respondents utilized shipping services, 33.3 percent of the respondents utilized financial services and 14.9 percent of the respondents utilized information services. Out of 316 who have turnover more than 30 lakhs, 89.9 percent of the respondents utilized shipping services, 85.5 percent of the respondents utilized both transportation and warehousing services, 76.8 percent of the respondents utilized forwarding services, 29 percent of the respondents utilized financial services and 24.6 percent of the respondents utilized information services.

Table 11: Association between company's turnover and the service provided
(Chi – square test)

	Value	df	Asymp. Sig. (2-sided)
Transportation	8.907	3	.031
Warehouse/ distribution	8.672	3	.033
Forwarder	9.147	3	.030
Shipper / management	12.872	3	.000
Financial	8.917	3	.029
Information	8.471	3	.036

The above hypothesis was tested through chi square at 5% level of significance and it was found that, all the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the company turnover and the service provided.

CHI – SQUARE ANALYSIS

- It was found that the factors were below 5% level of significance, hence the hypothesis is rejected and it was concluded that there is significant difference between the nature of concern and the type of service provider.
- It was found that there is significant difference between the nature of concern and the type of 3PL preferred.
- It was concluded that there is significant difference between the nature of concern and the service provided.
- It is concluded that shipping, forwarding, consolidation, contract delivery, freight bill payment, relocation, load tendering, brokering, storage, receiving, assembly, return goods, marking and labelling, forecasting, location analysis, network, layout design, fulfilment, EDI, scheduling, artificial intelligence, expect system, design and recycling have significant influence on the nature of concern.
- It was concluded that there is significant difference between the nature of exporter and the type of service provider.
- There is an difference between the type of service provider, type of 3PL, service provided, shipping services, forwarding services, consolidation services, contract delivery, freight bill payment services, relocation services, load tendering, brokering services, storage services, receiving services, assembly services, return goods services, labelling services, forecasting services, location analysis services, network services, layout services, fulfilment services, EDI services, scheduling services, artificial intelligence services, expect system services, design and recycling services with respect to company turnover.

Findings

The garment units whose nature is sole proprietorship were satisfied with the factors effective timely service, packaging charges, and price low ranks were secured for the factors of customized services, reliability and delivery time.

- The garment units which were run by merchant exporters have got satisfied with the factors of labelling and communication and not satisfied with the factors of transportation safety and reliability.
- The garment units which are operating for a period of 1-5 years were satisfied with the factors of transportation safety and reliability, and were not satisfied with the factors of trust and time. The garment

units who were operating for 6-10 years were satisfied for the factors of effective service, communication and not satisfied with the factors reliability.

Suggestions for improving the performance of 3PL service providers;

- In order to provide better performance, the 3PL service providers have to combine the process of implementing work, technology and expertise.
- New avenues of packing and shipping can be introduced for new products to protect from damage and excessive weight changes.
- The service providers have to rely heavily on technology to collaborate, connect and engage with customers.
- The reduce the customer complaints, automated solutions/ answering machines has to brought in the operation.
- The service providers should ensure that the top executives should not provide ordinary services, but they should keep the communication channel open and work together for better results.
- In order to overcome the problems during the operation, the service provider has to increase valves of competency simplicity, reachability and traceability.
- Assure the client with what is to be performed at what time and at what cost.
- The third party logistics service providers have to plan for cutting the transportation cost whenever fuel costs are getting increased.
- Précising the 3PL service provider in provide various services which are customised according to the client, the services will grow heights as the involvement and interaction between the clients and supply chain network is growing in a fast phase.

Conclusion

The garment units by and large utilize various 3PL service providers for uplifting their business. These service providers are poised to grow and modify with smart working practices which would satisfy the demand raised. Over the years, these service providers have made the garment waits to collaborate, connect and engage with them for business profits.

The 3 PL service providers in coming years will well understand the paradigms of change in the business operation and more enthusiastically to cater the needs of the business clients. If the service provider focus on customer approach, It systems, strategic core theory then these providers will be the best bench mark in the industry for best supply chain solutions.

Future Scope of the Study

The study can be extended to study the operational, financial and technological aspects of the 3PL service providers. Further inputs can be given to study the trends opportunities and challenges faced by them in a broader out-look will bring greater insights.

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