IMPACT OF DELIVERY PERFORMANCE ON SUPPLY CHAIN.

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Abstract:

Supply chain management process gains more importance in the textile industry. The aspects of packaging and storing laid its emphasis on the supply chain management. There exist a lot of delivery channels operating in supply chain management, as just in time. The main reason to emphasis on delivery channels is that, to reduce cost pertaining to inventory, and channels of distribution. The demand performance also helps in demand forecasting meeting the customer expectations. Thus a flexible supply chain is always a highly responsive for an effective delivery management in a garment industry.

Keywords: Supply chain management, delivery management, performance, order.

1.1 Introduction:

The supply chain management helps in getting performance in a textile industry. The aspects like, the effective delivery management in getting repeated orders, help in increased share in the market, retaining customers and change them in to a profitable customer, the damages were controlled, handling charges are controlled, alternative delivery and distribution channels were made, reduction of finished goods inventory and obsolete inventory is made possible statements were taken in to account. In order to analyse the effect, the above said statements were analysed through factor analysis and the hypotheses were analysed through ANOVA.

1.2 OBJECTIVE OF THE STUDY

Analyse the impact of delivery performance over supply chain.

1.3 RESEARCH METHODOLOGY

Research design: The research design for the study is exploratory.

Primary Data: The primary data was collected with the help of structured questionnaire.

Study Area: The study area is limited to Tirupur city, covering the garment units involved in exports.

Size of Sample: A 334 garment units involved in the exports of garments practising supply chain was included.

1.4 REVIEW OF LITERATURE

❖ Kushwaha & Barman (2010), presents work attempts to define the concept of Supply Chain Quality Management (SCQM) and develop a conceptual framework of SCQM after identifying the constructs of Supply Chain Management (SCM) and Quality Management (QM) practices through reviews. The framework proposes that the impacts of both SCM practices and QM practices would be evaluated in terms of competitive advantage and organizational performance. Further, according to the research, competitive advantage would be measured on the parameters of price/cost, quality, delivery dependability, product innovation and time to market. While organizational performance will be measured in terms of marketing, operations and finance.

❖ Lin & Li (2010), which proposes an integrated framework for supply chain performance measurement. It adopts the sixsigma metrics and includes three components (i.e., team structure measurement, supply chain process measurement and output measurement) to provide a more complete coverage of performance requisites. Also, a case is applied to demonstrate the feasibility of the model. Complying with the application of this framework, the whole chain or individual members in a supply chain can advance the performance in a more effective way. The measurement model uses the six-sigma metrics as an improvement tool for the supply chain performance which includes a systematic problem-solving approach based on five stages of define, measure, analyse, improve, and control.

❖ Chan & Chan (2010), which presents an example of solving the supplier selection problem in the apparel industry by using the Analytical Hierarchy Process (AHP), which takes the operational performance (for example, flexibility, cost, and delivery) into account for supporting supply chain strategies. The system was implemented with the aid of the commercial software package expert Choice. The researcher selects the best overall supplier. The five criteria under the performance assessment are delivery, quality, assurance of supply, flexibility, and cost, whereas under the company background/ business structure assessment area, criteria were also decomposed into four.

❖ Wallace & Choi (2009) is to put the terms flexibility, robustness, information structure, options, and market power into a coherent package in the context of supply chain management under uncertainty. The author has discussed important terms such as robustness, flexibility, information structure, options, and market power in supply chains under uncertainty. First illustrated that option theory provides a useful way of linking flexibility to robustness, but must be careful as good solutions normally are not obtained by making a starting point better by adding options.

❖ Balocco, Andreoni & Rangone (2008) presents the results of a study dealing with the adoption of eBusiness applications in two Italian industrial districts: the textile district in Common and the wood/furniture district in the area of Brianza. These two districts are part of important "made in Italy" industries, with a high volume of worldwide exports. The goal of this research is to show how Internet technology is changing the behavior of small and medium-sized enterprises (SMEs) in these two local (but with worldwide relevance) districts and to understand how the potential benefits and constraints for SMEs pointed out in several literature contributions are really acting in these districts.

❖ Haapala (2008) studied predictive models and improved environmental performance have been developed as a part of this dissertation for major processes in the manufacture of large steel components, namely electric arc furnace steelmaking, sand casting, and heat treatment operations. This study has developed models that apply to several scenarios which demonstrate the potential for improving manufacturing environmental performance measures for the production of a large steel casting and doesn"t focus on supply chain performance.

❖ Kevin, Bronzo & Oliveira (2008), investigates the relationship between supply chain maturity and performance, with specific references both to the Business Process Orientation Maturity Model and to the Supply Chain Operation Reference model. Quantitative, survey based research carried out with 478

Brazilian companies. Statistical analysis combined the use of descriptive statistics and structural equation modelling. The empirical results indicate a strong, positive statistical relationship between supply chain maturity and performance. The results also suggest that the deliver process maturity has a higher impact on overall performance than the other supply chain processes. This study provides solid statistical evidence that a company that has achieved a higher maturity level and implemented the maturity factors also has achieved superior performance. It also validates the application of these specific maturity factors in South America, specifically Brazil. This research confirms and expands upon earlier research suggesting higher levels of process maturity were related to superior performance.

1.5 Business profile of the respondents

Table 1: Type of organization

S.No	Type of organization	Frequency	Percentage
1	Sole proprietor	96	28.7
2	Partnership	124	37.1
3	Private Ltd company	84	25.1
4	Public Ltd company	30	9.0
	Total	**334**	**100.0**

Table 1 portrays that (37.1 per cent) are using the Partnership form of business organization, (28.1 per cent) are using the Sole Proprietorship form, (25.1 per cent) are private Limited Companies and (9 per cent) are public limited companies.

Table 2: Scale of operation

S.No	Scale of operation	Frequency	Percentage
1	Small	104	31.1
2	Medium	117	35.0
3	Large	113	33.8
	Total	**334**	**100.0**

Table 2 suggests that (35 per cent) are operating in medium scale, 33.8 per cent are operating in large scale and 31.1 per cent are operating in small scale.

Table 3: Number of employees employed

S.No	Number of employees employed	Frequency	Percentage
1	Less than 50	99	29.6
2	51 to 100	67	20.1
3	101 to 150	70	21.0
4	More than 150	98	29.3
	Total	**334**	**100.0**

It can be inferred from Table 3 that (29.6 per cent) are employing less than 50 employees 29.3 per cent of them are employing more than 150 employees, 21 per cent of them are employing 101 – 150 employees and 20.1 per cent of them are employing 51 to 100 employees.

1.6 Impact of delivery performance

The IDP measure comprises seven measurement items. The Kaiser-Meyer-Olkin (KMO)measure confirmed the sampling adequacy required for principal component analysis (PCA), with KMO=0.849 exceeding the suggested minimum standard of 0.60 required for conducting factor analysis (Field, 2009; Luthra et al., 2014). In addition, the Eigen value for the IDP measure was 2.811, higher than the acceptable value of 1. However, factor analysis provided two factor solutions for the IDP measure, indicating that all of the measurement items are fully representing the IDP measure, as they do account for one underlying factor. Figure 2 displays the factor analysis loading plot with Varimax rotation for the IDP measure as specified in the SPSS output.

Table 4 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.849
Bartlett's Test of Sphericity	Approx. Chi-Square	843.979
	df	21
	Sig.	.000

Table 5 Communalities

	Initial	Extraction
Helped in getting repeated orders	1.000	.857
Increased share in the market	1.000	.575
The old customers are retained and they are changed as profitable customer	1.000	.664
The damages were controlled	1.000	.678
Handling changes are controlled	1.000	.708
Alternative delivery, distribution channels are made.	1.000	.568
Reduction of finished goods inventory and obsolete inventory is made possible	1.000	.567
Extraction Method: Principal Component Analysis.		

Table 6 Total variance explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.737	53.391	53.391	2.811	40.157	40.157
2	.779	11.123	64.514	1.705	24.357	64.514
3	.647	9.236	73.750			
4	.579	8.279	82.028			
5	.512	7.314	89.343			
6	.395	5.642	94.984			
7	.351	5.016	100.000			

Figure 2: IDP factor analysis: rotation and loading plot

Component Plot in Rotated Space
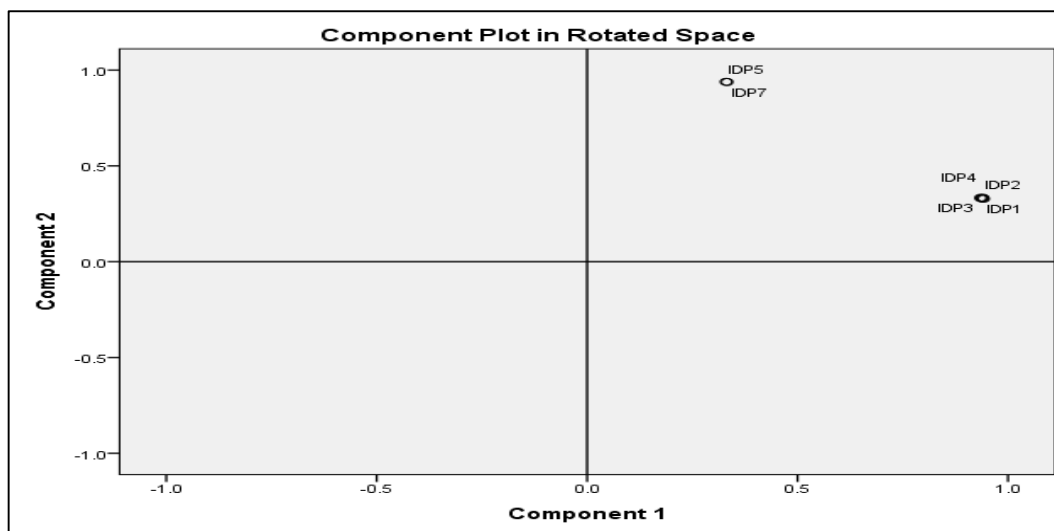
1.7 ANOVA

To examine whether there exists any discrepancy among different groups of respodnets categorized by type of organisation, scale of operation and number of employyes with respect to the impact of delivery performance under study, one way ANOVA was conducted for each of the business profile.

H0:- There is no significant influence of type of organisation in determining the impact of delivery performance.

H1:- There is a significant influence of type of organisation in determining the impact of delivery performance.

Type of organisation and impact of delivery performance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	74.512	19	3.922	6.171	.000
Within Groups	199.561	314	0.636		
Total	274.073	333			

The above table illustrates the relationship between type of organisation and impact of delivery performance. Since, calculated value is greater than tabulated value it results in rejecting the null hypothesis and accepting the alternate hypothesis. It could be noted that there is a significant influence of type of organisation in determining the impact of delivery performance.

H0:- There is no significant influence of scale of operation in determining the impact of delivery performance.

H1:- There is a significant influence of scale of operation in determining the impact of delivery performance.

Scale of operation and impact of delivery performance	Sum of Squares	df	Mean Square	F	Sig.

Between Groups	87.825	19	4.622	7.260	.000
Within Groups	199.932	314	0.637		
Total	287.757	333			

The above table illustrates the relationship between scale of operation and impact of delivery performance. Since, calculated value is greater than tabulated value it results in rejecting the null hypothesis and accepting the alternate hypothesis. It could be noted that there is a significant influence of scale of operation in determining the impact of delivery performance.

H0:- There is no significant influence of Number of employee in determining the impact of delivery performance.

H1:- There is a significant influence of number of employee in determining the impact of delivery performance.

Number of employee and impact of delivery performance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	97.177	19	5.115	9.485	.000
Within Groups	169.323	314	0.539		
Total	266.500	333			

The above table illustrates the relationship between number of employee and impact of delivery performance. Since, calculated value is greater than tabulated value it results in rejecting the null hypothesis and accepting the alternate hypothesis. It could be noted that there is a significant influence of number of employee in determining the impact of delivery performance.

1.8 Conclusion:

The demand fulfilment will bring certain benefits by getting repeated orders; thereby increase the business volume to a maximum level. The new customers are slowly becoming loyal customers. The damages encountered during the delivery operations were controlled effectively and managed, even in case of any unavoidable situation, the firms are ready with alternative delivery channels. Thereby the charges encountered on finished goods inventory and obsolete inventory is reduced by bringing it to zero.

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