A Study On Impact Of Factors Affecting Use Of Green Logistics On Performance Of Garment Units In Tirupur District

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Abstract

Green logistics actions comprises of evaluating environmental effectiveness of various strategies of distribution, decreasing utilization of energy for operations of logistics and diminishing waste and improving performance of companies. technology, enterprise, environment and Government factors are affecting use of green logistics on performance of garment units. Significant difference prevails between demographic features of employees and factors affecting use of green logistics in garment units. Enterprise, technology, environment and Government factors have positive and significant impact performance of garment units. In order to improve use of green logistics in garment units, they should select and adopt best technology available and suitable for them and they must give proper trainings to their employees for easy use of technology. Garment units should be adequately automated and integrate all kind of information and mangers must give proper response to employees and management must encourage employees to adopt green logistics practices.
Key Words: *Factors, Garment Units, Green Logistics, Performance*

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1. INTRODUCTION

Logistics is considered as the activities of which the aim is profit maximization and cost minimization of companies and it generally used in various business activities showing companies and in financial reporting. In recent years, logistics is used in combination with green by mentioning as green logistics (Schaltegger and Synnestvedt, 2002). Green logistics is one of the important practice of supply chain strategies and practices which decreases carbon footprints and environmental degradation of logistics operations that concentrates on handing of materials, management of wastes, transport and packages (Rodrigue et al 2012; Babiak and Trendafilova, 2011).

Green logistics includes of all kind of activities associated with environment efficient management of forward and backward movement of information, services and products among point of production to consumption its aim is to meet out or exceed demand of customers (Thiell et al 2011). Green logistics is activities of companies given due consideration to problems of environment and incorporating it into practices of supply chain management for improving environmental performance of consumers and suppliers (Su-Yol and Robert. 2008).

Green logistics actions comprises of evaluating environmental effectiveness of various strategies of distribution, decreasing utilization of energy for operations of logistics and diminishing waste and improving performance of companies (Sibihi and Eglese, 2009). Green logistics is adopted by various companies in order to attain sustainable business activities and use of green logistics in industry sector is affected by several factors starting from internal to external factors of industrial unites and personal factors of employees (Hosseini, 2007) and these factors affect their performance. Thus, it is important to study impact of factors affecting use of green logistics on performance of garment units.

2. REVIEW OF LITERATURE
1.Lin and Ho (2011) found that financial, internal, external and policy related factors were influencing adoption of green logistics methods among companies.

 2.**Tamulis et al (2012)** concluded that factors associated with company, customer, politics and society were factors affecting green logistics.

3. **Dr.Saravanan,Director and Head, Department of Management Studies, Sri Krishna College of Technology, Coimbatore**, Yoganandan.G ,SenthilKumar-2013 (Life Sciences Journal -2013;10(7)ISSN 1097-8135, p.p 1145-1153) conducted a study Titled "Problems Faced by Small Knitwear Exporters in Tirupur, Tamil Nadu.They concluded that Modernization is expected to help in both product and market diversification as well as better price realization for various categories. This also saves time and enables quick delivery to customers. Dogged by problems, investing in brands are still not preferred activities for the majority of Tirupur exporters. A constant watch over on the developments in the competing countries, a thorough understanding of fashion, trends and consumer preferences in the importing countries will help the Tirupur garment export sector remain competitive in the global market.

4..Vasiliauskas et al (2013) revealed that technological, ecological, social, legal and political factors and institutional, human resource, technical and micro economic factors were influencing execution of green logistics and they were significantly affecting performance and image of companies.

5.Zhang et al (2014) showed that strategies for management of environment, normative and mandatory and supply chain pressure were main factors for promoting adoption of green logistics practices.

6.Gunjal et al (2015) indicated that increasing cost of energy, changes in climate, internal atmosphere, efficient services to consumers and environment were main driver for adoption of green logistics.

7.Khan et al (2016a) found that effective adoption of practices of green logistics were significantly influencing performance of companies and sustainable development of economy and environment,

8.Qu et al (2017) concluded that enterprise, Government and environmental factors were influencing adoption of green logistics methods and they were affecting performance of companies.

9.Dr.R.Prabusankar, Professor, School of Management, Sri Krishna College of Technology,Cbe-**2017** (Volume 8, Issue 10, October 2017, pp. 836–843, Article ID: IJMET_08_10_090) in his study " Impact Of Supply Chain Management Practices On Competitive Advantage Of Small Manufacturing Firms In Coimbatore District"concluded that The strategic supplier partnership, information quality, internal lean practice, information sharing and customer relationship have significant and positive impact on competitive advantage of small manufacturing firms. To improve the Competitive advantage of small manufacturing firms, they should supply products swiftly to the market. Besides, small manufacturing firms must practice supply chain management practices effectively and efficiently for enhancing their competitive advantage in turn it influences performance of small manufacturing firms.

10.Dr.R.Prabusankar, Professor, School of Management, Sri Krishna College of Technology, Cbe - 2018 (Volume 9, Issue 7, July 2018, pp. 46–54, Article ID: IJMET_09_07_005) in his study titled "A Study on Influence of Supply Chain Management Practices on Product Quality and Performance of Organized Retail Sector In Tamil Nadu,concluded that The organized retail stores must share essential information with their business partners and the trading partners should exchange business intelligence with their organized retail stores. Information must be exchanged comprehensively between organized retail stores and their business partners and information should be exchanged sufficiently between organized retail stores and their business partners. Besides, the organized retail sector must reduce wastage of time in their retailing activities and they should give enough lead times to their suppliers.

11.Murthy and James (2018) revealed that cost, policies, support of top management, environment, knowledge, effectiveness of leadership, getting competitive advantage and improving image of company were factors influencing adopting green logistics methods.

12.Khan (2019) indicated that green logistics practices were significantly and negatively related with environment and social problems. Green practices related to logistics were significantly influencing performance of companies and growth of economy and sustainability.

3. OBJECTIVES OF THE STUDY

1. To discover factors affecting use of green logistics in garment units.
2. To inspect difference between demographic features of employees and factors affecting use of green logistics in garment units.
3. To evaluate impact of factors affecting use of green logistics on performance of garment units.

4. METHODOLOGY

Tirupur district is chosen for the present study and simple random sampling method is applied to select employees in garment units. Structured questionnaire is employed to collect data from 320 employees in garment units. Demographic features of employees in garment units are understood through percentages. An exploratory factor analysis is employed to find out factors affecting use of green logistics in garment units. To scrutinize difference between demographic features of employees and factors affecting use of green logistics in garment units, F-test and t-test are applied. Regression analysis is used to evaluate impact of factors affecting use of green logistics on performance of garment units.

5. RESULTS

5.1. DEMOGRAPHIC FEATURES OF EMPLOYEES IN GARMENT UNITS

The demographic features of employees in garment units are given in Table-1. Out of total employees, highest portion is male employees (55.63 per cent) in garment units and large more of them (30.63 per cent) are in age of 31 to 40 years. Large percentage (29.69 per cent) of them has higher secondary and highest portion of them (60.00 per cent) are in the position of workers. Majority of them (34.69 per cent) are in working experience of 6 – 10 years and most of them (32.81 per cent) receive income of Rs.15,001 – Rs.20,000 monthly.

Table-1. Demographic Features of Employees in Garment Units

Demographic Features of Employees	Number	Percent
Gender		
Male	178	55.63
Female	142	44.37
Age		
Less than 20 Years	52	16.25
21 to 30 Years	69	21.56
31 to 40 Years	98	30.63
41 to 50 Years	56	17.50
More than 45 Years	45	14.06
Education		
Secondary	89	27.81
Higher Secondary	95	29.69
Diploma	80	25.00
Under Graduation	56	17.50
Job Position		
Manager	54	16.88
Supervisor	74	23.12
Workers	192	60.00
Working Experience		
Less than 5 Years	49	15.31
6 – 10 Years	111	34.69
11 – 15 Years	100	31.25
More than 15 years	60	18.75
Monthly Income		
Below Rs.15,000	79	24.69
Rs.15,001 – Rs.20,000	105	32.81
Rs.20,001 – Rs.25,000	92	28.75
Above Rs.25,000	44	13.75

5.2. FACTORS AFFECTING USE OF GREEN LOGISTICS IN GARMENT UNITS

To discover factors affecting use of green logistics in garment units, the exploatory factor analysis is employed and the result is given in Table-2. Kaiser-Meyer-Olkin test value to measure sampling adequacy is 0.812 and Chi-square value for Sphericity test of Bartlett is 0.0038 significant and these show method of factor analysis is apt. Principal Component Analysis is used to obtain factors through varimax rotation and it is converged in 8th iterations. Cronbach's Alpha value is 0.88 illustrating each measure displays acceptable level of internal consistency. Four factors are obtained and they have 76.83 of per cent of variation on all the variables of present study.

Table-2. Factors Affecting Use of Green Logistics in Garment Units

Factor	Variable	Rotated Factor Loadings	Eigen Value	Variation (%)	Name of Factor
I	Availability of technology	0.71	3.54	23.58	**Technology**
	Efficiency of technology	0.67			
	Technical aspects of technology	0.69			
	Easiness to use technology	0.72			
	Experience in use of technology	0.65			
	Knowledge on technology	0.68			
II	Response of managers	0.73	2.39	20.64	**Enterprise**
	Involvement of management	0.69			
	Automation	0.70			
	Integration of information	0.65			
	Internal system of units	0.68			
III	Atmosphere	0.69	1.22	18.25	**Environment**
	Sound and noise	0.64			
	Utilization of energy	0.67			
	Pollutant	0.65			
IV	Green law	0.68	1.03	14.36	**Government**
	Environmental monitoring	0.64			
	Financial assistance	0.66			
	Total	-	-	76.83	-

Factor - I consists of availability of technology, efficiency of technology, technical aspects of technology, easiness to use technology, experience in use of technology and knowledge on technology. Therefore, this factor is described as **Technology** and it has 23.58 per cent of variation.

Factor - II includes response of managers, involvement of management, automation, integration of information and internal system of units. Hence, this factor is stated as **Enterprise** and it has 20.64 per cent of variation.

Factor - III comprises of atmosphere, sound and noise, utilization of energy and pollutant. Thus, this factor is denoted as **Environment** and it has 18.25 per cent of variation.

Factor - IV contains green law, environmental monitoring and financial assistance. So, this factor is labeled as **Government** and it has 14.36 per cent of variation.

Technology, enterprise, environment and Government factors are affecting use of green logistics on performance of garment units.

5.3. DEMOGRAPHIC FEATURES OF EMPLOYEES AND FACTORS AFFECTING USE OF GREEN LOGISTICS IN GARMENT UNITS

To scrutinize difference between demographic features of employees and factors affecting use of green logistics in garment units, ANOVA and t-tests are employed and the results are given in Table-3.

Table-3. Demographic Features of Employees and Factors Affecting Use of Green Logistics in Garment Units

Particulars	t-Value / F-Value	Sig.
Gender and Factors Affecting Use of Green Logistics in Garment Units	4.736** (t-value)	.000
Age and Factors Affecting Use of Green Logistics in Garment Units	4.928** (F-Value)	.000
Education and Factors Affecting Use of Green Logistics in Garment Units	5.245** (F-Value)	.000
Job Position and Factors Affecting Use of Green Logistics in Garment Units	5.410** (F-Value)	.000
Working Experience and Factors Affecting Use of Green Logistics in Garment Units	5.354** (F-Value)	.000
Monthly Income and Factors Affecting Use of Green Logistics in Garment Units	5.562** (F-Value)	.000

** *Significant at 1 % level*

The F-values and t-value are significant and they demonstrate significant difference exits between demographic features of employees and factors affecting use of green logistics in garment units.

5.4. IMPACT OF FACTORS AFFECTING USE OF GREEN LOGISTICS ON PERFORMANCE OF GARMENT UNITS

To evaluate impact of factors affecting use of green logistics on performance of garment units regression analysis is employed and results are given in Table-4. The coefficient of multiple determination (R^2) is 0.58 and adjusted R^2 is 0.60 showing that the regression model is good fit. F-value is 24.950 and it explains the model has significance.

Table-4. Impact of Factors Affecting Use of Green Logistics on Performance of Garment Units

Factors Affecting Use of Green Logistics	Partial Regression Co-efficients	t-Value	Sig.
Constant	1.012**	11.580	.000
Technology (X_1)	374**	6.125	.000
Enterprise (X_2)	.426**	6.816	.000
Environment (X_3)	.340**	5.732	.000
Government (X_4)	.305**	5.364	.000
R^2	0.60	-	-
Adj R^2	0.58	-	-
F	24.950**	-	.000

** *Significant at 1 % level*

Enterprise, technology, environment and Government factors are positively and significantly impacting performance of garment units.

6. CONCLUSION

The above study explicates that technology, enterprise, environment and Government factors are affecting use of green logistics on performance of garment units. Significant difference prevails between demographic features of employees and factors affecting use of green logistics in garment units. Enterprise, technology, environment and Government factors have positive and significant impact performance of garment units. In order to improve use of green logistics in garment units, they should select and adopt best technology available and suitable for them and they must give proper trainings to their employees for easy use of technology. Garment units should be adequately automated and integrate all kind of information and mangers must give proper response to employees and management must encourage employees to adopt green logistics practices. In addition, Government should give adequate support and encouragement to garment units for effective use of methods and practices of green logistics.

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