

The Impact of Green Logistics Management Activities on Achieving Environmental Sustainability

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Abstract : The current study aims to measure the impact of green logistics management activities represented by (green purchasing, green storage, green transportation, and green manufacturing) in achieving environmental sustainability represented by (a sustainable economic dimension, sustainable social dimension, and sustainable environmental dimension) for a sample of employees in one of the companies. The study aimed to identify the level of availability of green logistics management activities and environmental sustainability among the study sample from Union Food Industries Company Limited. The questionnaire tool was used to measure the level of availability of green logistics management activities and environmental sustainability among the study sample. (200) questionnaires were distributed, (169) of which were retrieved, including (11) damaged questionnaires and (158) valid questionnaires for analysis, indicating that the response rate of the studied sample reached (79%), as well as seeking to achieve the conclusions that the study seeks to answer by adopting a set of statistical tools represented by the normal distribution, the structural modeling equation, Cronbach's alpha coefficient, the arithmetic mean, the standard deviation, and the Pearson correlation coefficient using the program (SPSS.V.29), and the regression coefficients that were extracted using the program (AMOS.V.28). Thus, the study concluded that there is a statistically significant correlation and influence between green logistics management activities and environmental sustainability, which contributed to reaching a set of essential conclusions related to With the target company, perhaps the most prominent of these conclusions is that green logistics management activities are governed by a good relationship with environmental sustainability, which contributes to improving the mechanisms used to achieve environmental sustainability in the company in question. The company is also keen to adopt green purchasing practices to enhance aspects of the sustainable economy and achieve the resulting benefits at the environmental and economic levels. In addition, it is beneficial for companies to adopt green purchasing practices to support sustainable social aspects and enhance the social benefits associated with them. However, implementing green purchasing strategies can contribute to building a positive reputation for the company and increasing the participation of consumers and society in general.

Keywords: green logistics management activities, environmental sustainability, Al-Ittihad Food Industries Company Limited.

Introduction: The impact of green logistics management activities in achieving sustainable environmental performance is an important topic in the field of business and the environment. Green Logistics Management aims to improve the efficiency of resource use and reduce the environmental impact resulting from transportation, storage and distribution operations. Green Logistics Management activities affect achieving sustainable environmental performance by contributing to reducing consumption, improving transportation efficiency, and using alternative means of transportation with low environmental impact. As well as helping to improve storage and distribution processes to minimize loss and waste, which leads to reduced resource consumption and improved overall efficiency. Environmental information systems and advanced technologies provide tools to monitor and analyze environmental performance and provide comprehensive reports on sustainability.

In addition, green IT can be used to improve planning and forecasting in logistics operations, helping to reduce waste and improve overall resource utilization. Supply chain management systems based on artificial intelligence and data analysis techniques can be used to improve demand forecasting and inventory planning, reducing the occurrence of overstocking or resource shortages.

On the basis of the above, the current study aims to shed light on the impact of green logistics management activities in improving environmental sustainability. Therefore, the aim of the study is to improve the efficiency of resource use and reduce environmental pollution by improving transportation, storage and distribution processes.

The first section: the scientific methodology of the study

First: the problem of the study

Environmental sustainability and green logistics are the basis for Al-Ittihad Food Industries Limited in achieving its environmental goals and working to build a sustainable and acceptable business environment. The company reflects its commitment to achieving a balance between economic growth and environmental protection by implementing its commitment to the principles of environmental sustainability and green logistics in all aspects of its operations. Based on the nature of the important marketing activities undertaken by Al-Ittihad Food Industries Limited, it recognizes the importance of adapting itself to the continuous changes in the commercial environment. The company works to implement the principles of environmental sustainability and green logistics in all aspects of its business, including transportation, storage, and distribution operations (Li et al., 2021:3), and thus there are multiple challenges facing Al-Ittihad Food Industries Limited in the field of marketing activities, as it requires Continuous adaptation to the turbulent business environment. Therefore, environmental sustainability and green logistics have become important matters at present, which means that green logistics management activities can contribute to improving the efficiency of the efforts made and reducing the adverse behaviors that the organization leaves behind on the environment, which contributes to increasing environmental sustainability by reducing harm to the marketing environment. (Luthra et al.,2016:143), Al-Ittihad Food Industries Limited also realizes that the marketing mechanisms it adopts have a crucial role in achieving success and achieving its goals in the short and medium term. In addition, the company pays great attention to maintaining and enhancing environmental sustainability by applying a strategic vision based.

These techniques are applied in all aspects of marketing operations, from market research and data analysis to marketing strategies and product promotion. From this standpoint, the problem of the study can be formulated through a fundamental question that says, "Do green logistics management activities affect environmental sustainability .

Second: The importance of the study

The importance of the study can be summarized in light of highlighting its scientific and practical importance through:

1. Contribute to enriching scientific knowledge about green logistics management activities and their impact on environmental investigation. Through an analytical study of the opinions of employees in the company, we can obtain data and evidence that enhance our understanding of the relationship between green logistics and environmental sustainability, and identify the factors influencing achieving environmental sustainability .
2. Contributing to the development of new theories or enriching existing theories in the field of green logistics management and environmental sustainability. Through data analysis and study recommendations, a theoretical framework can be developed that explains the relationship between different factors and their impact on achieving environmental sustainability.
3. The study dealt with one of the topics that is considered a relatively recent topic and which has recently gained great importance among many researchers interested in this matter.
4. This study is considered a modest addition in supporting the scientific library in terms of addressing more information about the two variables of the study by collecting and classifying various theoretical concepts related to green logistics management activities.

Third: Objectives of the study

The main objective of the study is to understand the potential impact of green logistics management activities in achieving environmental sustainability through the mediating role in the studied sample. By analyzing the opinions of employees and available information, the study can provide practical recommendations to improve current practices and enhance environmental sustainability in the company. Through the theoretical questions of the study, its most important objectives can be stated in two directions:

1. Building a conceptual and intellectual framework for the study topics (green logistics management activities, and environmental sustainability), as well as its sub-dimensions through the intellectual paths of previous specialized literature and identifying the knowledge it contains.
2. Qualifying the logical relationship between the main and sub-study variables. This can contribute to achieving knowledge accumulation and intellectual building to enhance and support the relationship between these variables.
3. Understand and analyze the environmental impact of these activities, develop green logistics practices, and achieve environmental sustainability in the supply chain through the use of sustainable technology and information systems .
4. Identifying the levels of enhancing environmental awareness and education among those working in the field of green logistics management, organizations, suppliers and customers. This includes providing training and guidance on green logistics practices and their environmental benefits.

Fourth: The hypothetical model of the study

The hypothetical model provides a framework for analyzing data and interpreting the findings in the study. The study can test and analyze this hypothetical model to ensure the validity of the hypothesized relationships and provide a

deeper understanding of the factors that affect achieving environmental sustainability in the company studied. These variables can be summarized as follows:

1.variable Independent : Green logistics management activities represented (green purchasing, green warehousing, green transportation, and green manufacturing), a scale (Spangenberg, 2013; Romiguer, 2011) was adopted to measure the study variable.

2.variable Approved Environmental sustainability, which is represented by (the sustainable economic dimension, the sustainable social dimension, and the sustainable environmental dimension). The scale (Gerdessen & Pascucci, 2013) was adopted to measure the study variable .

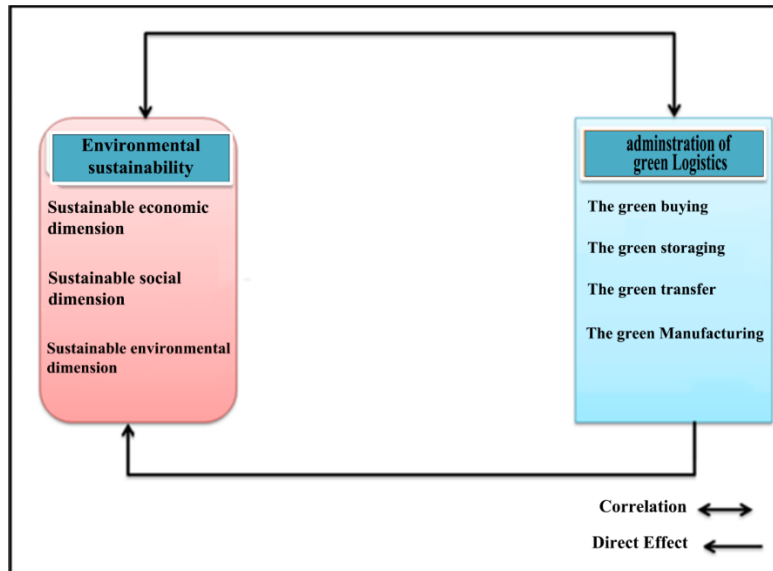


Figure (1) Hypothetical model of the study

Fifth: Study hypotheses

To test the relationships shown in the hypothetical model of the study, the following hypotheses can be put forward:

The first main hypothesis: There is a statistically significant correlation between the activities of green logistics management in its dimensions (green purchasing, green storage, green transportation, green manufacturing, and green packaging) and environmental sustainability in its dimensions (sustainable economic dimension, sustainable social dimension, and sustainable environmental dimension).

The second main hypothesis: There is a statistically significant impact relationship between green logistics management activities in their dimensions (green purchasing, green storage, green transportation, green manufacturing, and green packaging) and environmental sustainability in its dimensions (sustainable economic dimension, sustainable social dimension, and sustainable environmental dimension)

Sixth: Study sample

The study sample represented employees of the Union Food Industries Company in Babil Governorate. (200) questionnaires were distributed, of which (169) were retrieved, including (11) damaged questionnaires and (158) questionnaires valid for analysis, which indicates that the sample's response rate The amount studied reached (79%) to show the interest of the study sample towards the variables of the study.

The second section: The theoretical framework of the study

First: Green logistics management activities

1.Green logistics management concept

The negative impact of commercial activities globally has led to the formulation of different approaches to achieving sustainable development methods. The goal of sustainable development is to address growing concerns about environmental issues while at the same time responding to social and economic imperatives. Organizations around the world are feeling the pressure to implement green logistics into their value-creation systems. This pressure stems from the growing environmental awareness of consumers in many countries, as well as increasing prices of raw materials and energy, environmental legislation, and the influence exerted by dominant actors in the value chain (Mogeni & Kiarie , 2016:40.)

Ensuring green logistics activities requires the introduction of organizational, managerial and environmental techniques suitable for transformational changes, as well as innovative models to reduce the negative impact of the organization on the environment (Seroka-Stolka, 2016:484). This is in line with the green growth concept proposed

by the OECD. As international experience shows, the efficiency of the organization and organization of logistics activities can be improved by applying conceptually new management tools based on the principles of logistics, namely systematic process methods and concepts of “lean” production “just in time” “sustainable development” (Ciliberto et al (2021:3256). The term “green logistics” often refers to a set of sustainable policies and practices that are implemented to reduce environmental impacts that are mostly caused by various activities (manufacturing as well as transportation) carried out in the modern industry in the competitive business era. And the global one (Bala et al., 2021:1). As a result of the multiplicity of opinions of researchers and academic writers in developing a comprehensive concept of green logistics, it was necessary to create a table that explains the views towards the concept of green logistics management.

Table (1) Green logistics management concept

N o.	Researcher	Concept
1	Wang et al.,2018: 302	process of purchasing, manufacturing, transporting and storing goods until their The .distribution to customers and their eventual disposal
2	Benrajesh & Rajan, 2019: 1	An initiative to control damage to the environment through logistics using advanced .tools
3	Seroka-Stolka & Ociepa-Kubicka,2019:472	A set of supply chain management practices and strategies that reduce the .environmental and energy impacts of distributing goods
4	Trivellaset al., 2020:2	n its operations to improve A set of mechanisms aimed at using renewable energy i environmental performance, reduce waste, achieve economic development, and address the .problems that stand before the organization to achieve its goals
5	Zhang et al., 2020: 716	adopting more environmentally friendly Expanding the traditional logistics process and activities and settings that lead to environmental conservation
6	Hernandez et al.,2022:401	.A mechanism to reduce the environmental impact of delivery and logistics operations
7	Yedilbayev et al.,2023: 1086	f supply chain management practices and strategies that reduce environmental A set o damage and improve positive energy in the distribution of goods in a way that preserves the .environment from harm

is a sustainability approach that aims to **management From the above, the researcher believes that green logistics** .achieve a balance between economic and environmental performance in logistics operations

2.The importance of green logistics management

The importance of green logistics is to contribute to environmental protection by relying on the context of the supply chain and resource management, my agencies:

- Reducing pollution resulting from all traditional logistics activities, and therefore management must analyze all traditional logistics processes that cause pollution, such as the use of conventional means of transportation with high emissions and inefficient storage (Tang, 2023:89).
- Following new environmental standards that reduce the environmental impacts of all operations carried out by manufacturing organizations (García Alcaraz et al.,2022:3).
- Dispose of harmful materials by following strategies to properly recycle them, and therefore the manufacturer must evaluate the environmental impacts of all the operations it carries out, including the use of raw materials, manufacturing processes, waste management, and the use of natural resources (Aguiar et al., 2022: 35).
- Protecting the environment, saving resources and achieving sustainable development, which requires the company to develop an environmental strategy aimed at protecting the environment and achieving sustainable development. This includes setting specific environmental goals and priorities and developing action plans to achieve them. (Al-T & Abdul-M,2018:8; Averkyna et al.,2019:791).
- Encouraging and developing society, economy and environment together, through the company enhancing the balance between these three elements and paying attention to developing them together. This includes considering the impact of economic activities on society and the environment and achieving sustainability in economic activity (Jinru et al., 2022:3837).

3.Dimensions of green logistics management

Green logistics management can be measured through several activities:

1.Green purchasing: Green purchasing represents adopting some environmentally friendly policies, as organizations ensure that suppliers achieve their environmental goals. The purchasing company may deploy cooperation-based activities that include training, sharing environmental information, and joint research. Therefore, in order to achieve green purchasing, organizations must follow practices that consist of: One of the guiding activities for green logistics, as many studies have attempted to identify green activities in organizations that are referred to as environmental and quality management systems. Internal ecological management is crucial to improving an organization's environmental performance (Mogeni & Kiarie , 2016:42).

2.Green storage : Green storage justifies using environmental and sustainable storage methods and technologies. Green storage aims to reduce the impact of storage operations on the environment through the use of sustainable resources, energy-efficient technologies and waste management (Baumann et al., 2019:517).

3.Green transportation : Green transportation includes encouraging and adopting methods to preserve products from damage by investing in modern mechanisms and technologies in product packaging Masoumik et al., 2015:671).

4.Green manufacturing : Green manufacturing is a production method that aims to achieve efficient use of available resources at all production stages, as well as reducing pollution and the emission of greenhouse gases on the one hand, and reducing the costs resulting from worker injuries resulting from that pollution on the other hand (Jian, 2013). :1223).

Second: Environmental sustainability

1.The concept of environmental sustainability

The concept of the environment is one of the most common and used terms among organizations, and the environment can also be referred to through human activity itself, such as the industrial, economic, cultural, agricultural, political, social environment, etc. Accordingly, it is difficult to develop a comprehensive definition of the environment that includes all areas of use of this concept, as this requires knowledge of all these uses and regions alike. The environment is defined as the sum of the physical, chemical, biological and social elements that can have immediate, potential, direct or Indirect impact on human activities and living organisms (Hasiloglu & Al-Rifai.,2011:1053).

The complex environment exerts an important influence on consumer reactions by influencing consumer environmental behavior, which requires marketers to understand how various purchasing decisions are made by consumers to build plans, strategies and methods that contribute to meeting the tastes and preferences of consumers (Salih, 2015: 188). In turn, it affects the consumer's desire to buy these products, and therefore the organization as a whole must limit dealing in products that affect the environment (Zhao et al., 2016:399); (Mathur, 1995:39) .

On the other hand, sustainability as a concept is a very prominent issue at this present time, as from an environmental perspective, it represents empowering current individuals to prepare and protect the environment for future generations. (Yadav&Bandyopadhyay,2014:130). (Kamaruddin et al., 2016:730) stated that awareness of environmental issues may or may not affect the individual in order to participate in a specific activity in the environmental program, as other factors can affect him, such as social standards, financial resources, and other psychological and social conditions. In order to participate in environmental programs. In view of the varying opinions of researchers, writers, and academics about the concept of environmental sustainability, by developing a comprehensive definition that explicitly expresses ecological sustainability, the researcher, therefore, resorted to presenting what was easily obtainable of researchers' opinions regarding this term, as in Table (2).

Table (2): The concept of environmental sustainability according to the opinions of some researchers

N o.	Researcher	Concept
1	Skipnuk et al.,2019:4	ability of an ecosystem to maintain its structure and functional features when The .exposed to external and internal factors
2	Ali, 2021: 79	Meet the resource and service needs of current and future generations without .compromising the health of ecosystems
3	Ali & Muhammed , 2021:2544	The organization's ability to manage operations (planning, organizing and controlling) .in environmental, social and economic activities
4	Mohammed & Dominic, 2021: 295	future generations without Meeting the resource and service needs of current and compromising the health of ecosystems that achieve the organization's goals
5	Hanafi , 2023: 78	Responsible interaction with the environment to avoid depletion or degradation of .I qualityterm environmenta-natural resources and allow long
6	Ikeke,2023:46	Responsible interaction with the environment to avoid depletion or degradation of natural resources and provide environmental space in the long term
7	Yurtseven,2023:22	nature can work in harmony Building and maintaining a system in which humans and .and allow future generations to meet their needs

In summary of the above, environmental sustainability can be defined as a concept that refers to the ability to maintain the health and sustainability of ecosystems in the long term, as it achieves a balance between meeting the needs of current generations without compromising the ability of future generations to meet their needs.

2.The importance of environmental sustainability

Environmental sustainability focuses on the balance between the economic, social and environmental performance of organizations in the long term. Thus, sustainable organizations enhance environmental and social values in their strategies and work to improve their reputation and enhance customer choice in their favor over the competition. Therefore, the importance of environmental sustainability can be highlighted in the following:

- Protecting and preserving the natural environment (Bebbington et al., 2017:8; Schwerhoff&Sy, 2017:394)
- Generating and enhancing community awareness that contributes to encouraging responsible environmental behavior

- Effective management of resource consumption, including water and energy, as well as reducing waste, emitted gases and harmful substances.
- Building partnerships with establishments that place environmental goals at the forefront of their objectives (Larraán Jorge et al., 2016:2; Sullivan et al., 2018:238. (
- Predicting environmental changes for the future and identifying methods and practices that prevent ecological problems.
- Adopting systems and applications that ensure successful management of the environment to maintain a clean and safe environment (Yuan, 2013:177)

3. Dimensions of environmental sustainability

Environmental sustainability can be measured through three dimensions (Tooranloo & Azadi & Sayyahpoor , 2017)

- **Sustainable economic dimension:** The principle of the sustainable economic dimension enhances a reasonable quality of life by enhancing the productive capacity of organizations and individuals in society. Economic performance involves creating and distributing goods and services that will help raise the standard of living around the world. As open and competitive global markets encourage innovation, efficiency, and wealth creation, economic performance is intrinsically linked to the principles of social justice and environmental safety (Bansal et al., 2005:198-199)
- **Sustainable social dimension:** Social influence implies the issue of one customer in another customer to bring about a change in his feelings, behaviour, thoughts and behavior, intentionally or unintentionally. Social influence refers to the degree to which service providers realize their abilities to influence the strategic, administrative and operational results of the organization's internal operations By influencing the customer's feelings and behaviors (Sağnak et al., 2015:152)
- **Sustainable environmental dimension:** Improving environmental awareness and environmental sensitivity helps individuals live in a healthier and safer environment, and this is only possible by increasing qualified individuals receiving environmental education (Cetin & Nisanci, 2010:1830)

Third: The relationship between green logistics management activities and environmental sustainability

Logistics companies perform various logistics activities that include warehousing, transportation, inventory management, and other processing for their customers. Automated logistics is prominent in global efforts to prevent environmental change. As a result, environmental issues in the logistics sector are frequently identified by academics and managers alike. Many ecological practices are implemented in the field of logistics services, providing a great possibility to contribute to the environmental performance of companies through them (Seroka-Stolka, 2016:483-484). In other words, the responses of organizations in different industries to environmental issues differ, and they do not participate in Most logistics companies are directly involved in manufacturing operations. (Dzwigol et al., 2021:10862) believes that ensuring the sustainable development of logistics systems requires the introduction of appropriate organizational, administrative, and environmental techniques for transformational transformations, in addition to innovative models to reduce the negative impact of transportation on the environment. This is in line with the green growth concept proposed by the OECD. It also improves the efficiency of logistics activities by implementing conceptually new management tools based on the principles of logistics, namely the systematic approach to operations, and the concepts of "just-in-time" production and sustainable development.

Green logistics is a model of logistics that aims to be environmentally friendly and contribute to environmental and societal sustainability, along with achieving economic efficiency. Supporting the relationship between green logistics management activities and environmental sustainability aims to measure and reduce the environmental impact of all logistics activities, including the flow of products, information, and services in both directions between the starting point and the point of consumption. The focus is on creating sustainable value for the company by achieving a balance between economic and environmental efficiency (Gechevski et al., 2016:67)

Logistics activities play an important role in economic development, but they also bring harm to long-term environmental sustainability (Petrini & Pozzebon, 2009:178). (Aldakhil et al., 2018:862) believes that studying the determinants of green logistics services in the member states of the organization has a strong, positive relationship towards sustainable economic and environmental growth. (Khan et al., 2018:589) stated that there is an impact of logistics performance on macroeconomic and environmental indicators, and this shows that better performance of logistics services stimulates the economic growth of the organization.

From the above, it can be said that understanding the relationship between green logistics management activities and environmental sustainability contributes to determining the way to reduce the negative impact of logistics operations on the environment and enhance environmental efficiency, which leads to improving the efficiency of using resources, reducing waste, recycling, and controlling pollution. By following green supply chain practices, companies can improve their environmental performance by improving product quality, reducing waste, and using resources more efficiently.

The third section: the practical framework for the research

First: coding and description

This paragraph is concerned with expressing the study variables with a group of symbols to facilitate the process of analyzing the data related to the study variables, as well as building a clear perception for the reader regarding the symbols that were used for the analysis, and in fact, what are these symbols to reflect the study variables, and the table (3) It explains the description and coding of the variables and dimensions of the study included in the analysis.

Table (3): Description and coding of the variables and dimensions of the study

code	Paragraphs	dimensions-Sub	The main variable
GLMA	GM _{PU1} – GM _{PU5}	5	Green purchase
	GM _{MA1} – GM _{MA5}	5	Green manufacturing
	GM _{ST1} – GM _{ST5}	5	Green storage
	GM _{TA1} – GM _{TA5}	5	Green transportation
ENSU	ES _{EC1} – ES _{EC5}	5	Sustainable economic dimension
	ES _{SO1} – ES _{SO5}	5	Sustainable social dimension
	ES _{EN1} – ES _{EN5}	5	Sustainable environmental dimension

Second: Reliability analysis

a. The results show that the items of the measurement tool are characterized by high stability and credibility as it obtained a strong correlation coefficient between its two parts of (0.723) and an odd proportional breakdown equal to (0.867) and an even split of (0.841) to stabilize at a Spearman-Brown correlation coefficient of (0.824), for its part, it supports The Cotman partition coefficient for the half-segmentation has a consistency strength of (0.823), and this shows the consistency and harmony of the paragraphs of the measuring instrument.

b. The results show that the variable of green logistics management activities is represented by four dimensions and (20) items. The items of the measurement tool are characterized by relative stability with a Cronbach's alpha coefficient of (0.901). This indicates the interest of the studied company in the green storage dimension with a reliability coefficient of (0.915). This is due to the consistency and compatibility of the dimension items with the opinions of the study sample, which is an acceptable value according to the indicators (Nunnally, 1994).

c. The results resulted in the presence of relative stability for the items of the environmental sustainability variable, which is represented in three dimensions and by (15) items. The items of the measurement tool are characterized by relative stability with a Cronbach's alpha coefficient of (0.918). This indicates the interest of the studied company in the sustainable economic dimension with a reliability coefficient of (0.918). 0.928 This is due to the consistency and compatibility of the dimension items with the views of the study sample, and the analysis generally led to accepting the stability of the measurement tool according to indicators (Nunnally, 1994 ; Hair et al., 2010)

Table (4) Cronbach's alpha reliability coefficients For the study measurement tool

Cronbach's alpha coefficient To remove		Paragraphs		The dimension	variable	
0.902		5		Green purchase	Green logistics management activities	
0.908		5		Green manufacturing		
0.915		5		Green storage		
0.907		5		Green transportation		
0.901		coefficient for the green logistics management Cronbach's alpha activities variable				
0.928		5		Sustainable economic dimension	Environmental sustainability	
0.914		5		Sustainable social dimension		
0.920		5		Sustainable environmental dimension		
.918		coefficient for the environmental sustainability Cronbach's alpha variable				
strong		0.723		Correlation coefficient between the two parts of the questionnaire		
Its paragraphs fulfill the condition of stability		29		Individually	0.867	Half split coefficient
Its paragraphs fulfill the condition of stability		30		husband my	0.841	
strong		0.824		Brown coefficient -Spearman		
strong		0.823		half coefficient-Cotman split		

Third: Describe and present the results of the study and their analysis

Independent variable: green logistics management activities

The results of Table (5) show that the level of the coefficient of variation of the green transport dimension reached (12.70), which is what places it in first place, with a relative importance value of (74%), an arithmetic mean of (3.70), a standard deviation of (0.47), and an answer trend towards agreement, which means that The company's management pays great attention to environmental and sustainability issues in its operations. The company uses machinery and equipment that consume a low amount of electrical energy and is implementing a program to reorganize manufacturing operations to improve efficiency and reduce waste.

Table (5) indicates that the green storage dimension came in last place with a coefficient of variation of (17.34), a relative importance of (74%), an arithmetic mean of (3.69), a standard deviation of (0.64), and a response trend towards agreement, which means that the workers consider limiting The costs and damage to the environment during transportation and street traffic are significant, which indicates that the company's employees consider the implementation of a relocation and manufacturing program to be unimportant to them and there is a wide diversity of views regarding it.

Table (5) describes the responses of the study sample towards green logistics management activities

Order of importance	Relative importance	Coefficient of variation	standard deviation	Arithmetic mean	The dimension
2	71%	14.93	0.53	3.55	Dimension of green purchasing
3	74%	16.71	0.62	3.71	manufacturing Green dimension
4	74%	17.34	0.64	3.69	Green storage dimension
1	74%	12.70	0.47	3.70	Green transportation dimension

Dependent variable: environmental sustainability

The results of Table (6) revealed that the level of relative importance regarding the sustainable environmental dimension reached (75%), with an arithmetic mean of (3.75), a standard deviation of (0.54), and a response direction towards agreement, with a coefficient of variation equal to (14.40), which means that the employees of the company They give more importance to the company's development and developing employees' skills and information Compared to developing and implementing environmental strategies to ensure sustainable growth.

While Table (6) showed that the level of relative importance regarding the sustainable social dimension came in last place at (72%), with an arithmetic mean of (3.59), a standard deviation of (0.59), and an answer trend towards agreement, with a coefficient of variation equal to (16.43), which means The company's employees give greater importance to the company's provision of green products that depend on achieving customer satisfaction Compared to empowering workers to expand their powers.

Table (6) describes the responses of the study sample towards environmental sustainability

Order of importance	Relative importance	Coefficient of variation	standard deviation	Arithmetic mean	The dimension
2	73%	15.03	0.55	3.66	Sustainable economic dimension
3	72%	16.43	0.59	3.59	Sustainable social dimension
1	75%	14.40	0.54	3.75	Sustainable environmental dimension

Fourth: Testing hypotheses

The first main hypothesis: There is a statistically significant correlation between the activities of green logistics management in its dimensions (green purchasing, green storage, green transportation, green manufacturing, and green packaging) and environmental sustainability in its dimensions (sustainable economic dimension, sustainable social dimension, and sustainable environmental dimension).

The results presented in Table (7) revealed that there is a statistically significant correlation between the activities of the Green Logistics Department and environmental sustainability, amounting to (0.525) and at a significance level (0.01), which means that the activities of the Green Logistics Department are governed by a strong relationship towards environmental sustainability, and this contributes to improving The mechanisms used to achieve environmental sustainability by the company in question. In addition, there is a correlation between all dimensions of these variables.

Table (7) Matrix of the relationship between green logistics management activities and environmental sustainability

	purchase the green	Manufacturing the green	Storage the green	Transport the green	Activities administration logistic the green
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The dimension Economic Sustainable					
r	.481 **	.395 **	.174 *	.330 **	.459 **
The dimension Social Sustainable					
r	.421 **	.263 **	.191 *	.317 **	.356 **
The dimension Environmental Sustainable					
r	.411 **	.285 **	.245 **	.415 **	.447 **
Sustainability Environmental					
r	.547 **	.392 **	.210 **	.442 **	.525 **
Correlation below the 0.01 significance level **					
The correlation is below the 0.05 significance level*					

The second main hypothesis: There is a statistically significant impact relationship between green logistics management activities in their dimensions (green purchasing, green storage, green transportation, green manufacturing, and green packaging) and environmental sustainability in its dimensions (sustainable economic dimension, sustainable social dimension, and sustainable environmental dimension)

The results of Table (8) and the data reviewed in Figure (2) show that there is a significant effect of green logistics management activities on environmental sustainability, as increasing green logistics management activities by one unit leads to an improvement in environmental sustainability of (0.854) with a standard error rate. Equal to (0.024) and with a critical value of (35.583), which means that implementing green logistics activities and using environmental sustainability can positively impact the sustainable economic dimension, the sustainable social dimension, and the sustainable environmental dimension in the company in question. This means that the integration of green logistics with environmental sustainability can contribute to enhancing the environmental sustainability of the company.

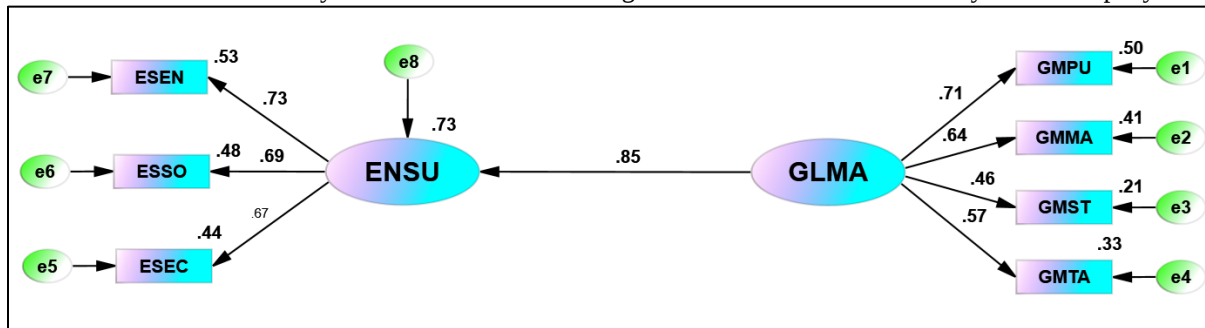


Figure (2) Standard model of the impact of green logistics management activities on environmental sustainability. The activities of the Green Logistics Department also contributed to explaining (0.728) of the amount of variation occurring in environmental sustainability. Still, the remaining value falls outside the limits of the study.

Table (8): Results of analyzing the impact of green logistics management activities on environmental sustainability

Sig.	R2	C.V	Standard error	Standard weights	Track		
0.001	0.728	35.583	0.024	0.854	Environmental sustainability	<---	Green logistics management activities

Section Four: Conclusions and Recommendations

First: conclusions

1. The results showed that the activities of green logistics management are governed by a good relationship with environmental sustainability, and this contributes to improving the mechanisms used to achieve environmental sustainability in the company in question.
2. The activities of the Green Logistics Department are governed by a strong relationship, and this contributes to improving the mechanisms used in the company concerned.
3. The results showed is governed by a strong relationship towards environmental sustainability, and this contributes to improving the mechanisms used to achieve environmental sustainability in the company concerned.
4. The results show that business firms that focus on developing and adopting green IT solutions and implementing environmental trends, policies and practices may be better able to achieve environmental sustainability and simultaneously improve economic, social and environmental performance in the business context.

5. The results showed that implementing green logistics activities technology can positively impact environmental dimensions, trends, policies, practices, technology, and sustainable governance in business companies. This means that the integration of green logistics can contribute to enhancing environmental orientations and improving the overall performance of companies.

Second: Recommendations

1. The organization should consider the trends as an essential part of its strategy to achieve environmental sustainability. This dimension's effectiveness can be enhanced by comprehensively considering economic, social, and environmental factors in decision-making and implementing sustainable practices.
2. The company must now adopt sustainable and committed policies to promote green purchasing, including setting standards to evaluate suppliers' environmental and social practices and motivating them for continuous improvement. It also requires internal policies that encourage employees to make sustainable purchasing decisions and provide them with ongoing support and training.
3. The need to improve the use of resources, apply clean production techniques, and promote sustainable innovation in the manufacturing sector. By strengthening the link between green manufacturing and sustainable technology, companies can achieve environmental sustainability and enhance their competitiveness in the market.
4. The necessity of developing policies and procedures that enhance continuous monitoring and evaluation of green manufacturing performance and compliance with environmental standards. In addition, the role of oversight efforts must be strengthened and the balance between financial, environmental and social interests must be strengthened. By maintaining the link between green manufacturing and governance, companies can achieve overall sustainability and build a strong reputation as an organization committed to environmental and social responsibility.
5. The necessary support and encouragement to implement these policies should be provided by providing financial resources, training and awareness to employees. By strengthening the link between green storage and policies, companies can achieve environmental sustainability and adhere to environmental and social standards set by laws and legislation.

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