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QLANTIC
JOURNAL OF
SOCIAL SCIENCES
AND HUMANITIES

Supply Chain Management Construction: The Role of IoT in Human Resource Management and Green Logistics

Dahshilla Junejo ¹ Anila Devi ² Mehtab Begum Siddiqui ³ Azeem Akhtar Bhatti ⁴

Abstract: Environmental practices are incorporated into the supply chain management and logistic process of human resource management. It is referred to as a green logistics supply chain. To reduce the negative effects of logistical activities on the environment, sustainable transportation, eco-friendly packaging, and effective waste management techniques are used. Adopting environmentally conscious supply chain practices can improve a company's environmental reputation while lowering carbon emissions, increasing operational effectiveness, and saving money on human resource management. In order to adopt sustainable practices across every aspect of the value chain, from acquiring raw materials to delivering completed items to clients, this strategy necessitates coordination across stakeholders in the supply chain management and logistic process. In general, using a green logistic supply chain is a crucial approach for companies looking to grow sustainability while reducing their environmental impact. Using IoT in human resource management can boost operational effectiveness, cut down on transportation expenses, and boost customer satisfaction. For instance, current information on inventory levels, the quality of goods, and shipment status can be provided by smart sensors and devices, allowing businesses to optimize the way they manage their supply chains and reduce waste in human resource management.

Key Words: Human Resource Management, Internet of Things (IoT), Green Logistics, Green Logistics Supply Chain

Introduction

The logistics sector has accelerated elopement and modernized logistics in response to the nation's strong economic growth. The industry has grown to play a significant role in promoting the development of the country's economy (Khaskhelly, 2018). My dialect of the contemporary logistics sector has, but also contributes to, a number of economic and environmental issues. For instance, excessive logistical expenses increase the overall social cost of economic expansion. Damage to the environment brought on by excessive consumption High emissions have an impact on society as a whole's green development. In this study, using cutting-edge logistics management techniques and technologies, green logistics can consume a lot of resources (Khaskhelly et al., 2023). This study lessens energy use, environmental pollution, and the stress that comes from both energy use and the environment. Acknowledges the development of green and what it turns into (Sahabuddin et al., 2023). There are numerous morphing political and operational obstacles. We urgently need to solve the logistics sector's modern green growth. Compared to the conventional green logistics development concept, a novel idea called "green development" is based on human nature. Traditional logistics have various drawbacks as a result of the late development of technical means, breadth of operations, process modes, and standardization, such as labor-intensive and inefficient information leakage, widespread financial loopholes, and low efficiency. There are several viewpoints regarding green energy (Siddiqui et al., 2023).

¹ Assistant Professor, Department of Commerce, University of Mirpur Khas, Sindh, Pakistan.

² Assistant Professor, Benazir School of Business, Benazir Bhutto Shaheed University, Lyari, Karachi, Sindh, Pakistan.

³ Assistant Professor, Institute of Commerce and Management, University of Sindh, Jamshoro, Sindh, Pakistan.

⁴ Assistant Professor, Department of Commerce, Sindh University, Laar Campus Badin, Sindh, Pakistan.

▪ **Corresponding Author:** Azeem Akhtar Bhatti (azeem.bhatti@usindh.edu.pk)

▪ **To Cite:** Junejo, D., Devi, A., Siddiqui, M. B., & Bhatti, A. A. (2024). Supply Chain Management Construction: The Role of IoT in Human Resource Management and Green Logistics. *Qlantic Journal of Social Sciences and Humanities*, 5(3), 159-173. <https://doi.org/10.55737/qjssh.336495530>



According to some academics, a two-pronged strategy is needed to implement green micro-statistical analysis in the online environment. Both the government and businesses are expected to take a stand for their respective positions and work together to put these positions into practice (Raza et al., 2024; Junejo et al., 2023). Absence of This picture contributes to the existing PI records as well as other things. Another crucial component of documentation is verifying the following details: Whatever the volume of traffic, In PI, a large percentage of drivers are able to leave work early (Tan et al., 2020). The goal of this article is to examine the connection. Environmental damage resulting from consumption and logistical performance 42 Asian nations' data were gathered between 2007 and 2016 (Sahabuddin et al., 2023). Data indicate a strong correlation between environmental degradation and the effectiveness of logistics (Van Vo & Nguyen, 2023). Index of World Performance (LPI). Reduced carbon dioxide emissions significantly, yet figures at this time try. Asia has seen a significant increase in carbon dioxide emissions. The findings demonstrate a substantial correlation between Logistics and changing all the time (Khokhar et al., 2023).

In contrast, the management of the complexity of the logistics sector has drawn attention to it. On the other hand, everyone is aware that these modifications had a sign unable to have an impact on supply chain management and logistics human resource management, which had a major impact on the advancement of green logistics services in the logistics sector and the development of technological and strategic supply chain management (Ghahremani Nahr et al., 2021). Environmental problems might sometimes be a hindrance. The logistics company's attention. The natural environment is in combination (Siddiqui et al., 2023). The logistics business will undoubtedly advance as a result of a coordinated study on protection and sustainable development. The Vietnamese supply chain can be significantly greened with the use of green logistics expertise and intellectual capital human resource management. Sustainable practices can be included in logistics operations to save costs, boost productivity, and have a smaller negative impact on the environment (Liu & Peng, 2022).

A thorough awareness of sustainability issues, such as the carbon footprint of transportation, energy efficiency, and waste management, is crucial for supply chain players in terms of knowledge of green logistics human resource management (Bhatti et al., 2023). With this information, businesses can spot areas where they can improve in order to have a smaller negative impact on the environment. By reducing the amount of waste that is disposed of in landfills or incinerators, co-production technology helps to reduce environmental pollution and health concerns associated with waste disposal. It is accomplished using co-production technology, which transforms leftovers or waste products into useful commodities (Meihui et al., 2023). In this paper, we explore third-party co-production, which occurs when both distinct producers produce the traditional product and unique co-produce. Examples from several industries serve as our inspiration (Zhang & Zhao, 2022). Another traditional process produces the co-produce. From the extra materials, the initial manufacturer sold. The two producers do this by utilizing third-party co-production technologies to build a supply chain for human resource management (Khokhar et al., 2022). According to our perspective, by outlining how co-production technology influences the profitability of traditional manufacturers and the green credentials of the industry, our research adds something unique to the body of literature on the subject (Bhatti et al., 2023). We also look into how much consumers value the environmental impact of the co-produce. In opposition, who were we to examine the co-production supply chain's optimal wholesale pricing for byproducts and endogenously research the competition between the conventional resource and the produce human resource management?

Furthermore, because it provides businesses with access to virgin resources, the demand for virgin resources is reduced through co-production technology and alternative raw material sources (Irshad et al., 2019). The decrease in demand for virgin resources leads to a reduction in the environmental impacts of resource extraction, including deforestation, water pollution, and air pollution (Hailiang et al., 2023). For instance, the act known as the Resource Conservation and Recovery Act (RCRA) requires businesses to apply best management practices in order to reduce the amount of hazardous waste they produce (Abduloev et al., n.d.). Environmental regulations encourage recycling to reduce the need for virgin materials. To minimize the amount of paper waste created, for example, by requiring the use of recycled paper as a government official office under the Clean Air Act (Hou et al., 2022). In a similar vein, the Energy Policy Act of 2005 promotes the use of sources of sustainable energy, such as solar and wind, in order to reduce the demand for fossil fuels and, as a result, the quantity of waste generated during the

manufacturing of fossil fuels (Khaskhelly et al., 2022). Writings in traditional economics regularly show that an increase in total output caused by more competition from an outside party is detrimental to both the Contrarily, this study demonstrates that third-party co-production, utilizing the residual value of materials that would otherwise be destroyed, may improve both environmental performance and the O Em's bottom line (Mothafar et al., 2022). This literary work is the study on third-party re-manufacturing, which is the one in this line that is most likely to be comparable to this one. Third-party re-manufacturing is the process through which an independent re-manufacturer collects re-manufactured products from previously owned original equipment manufacturers (OEM) components. Typically inferior to brand-new products, reconditioned goods (Chen et al., 2019).

Literature Review

This study's goal is to review the green supply chain management (GSCM) and human resource management literature that was published between 1998 and 2017 while providing new information and suggestions for future research (Ahmed et al., 2022). The study compiles data from the Scopes and ISI Web of Science databases and selects 880 papers for objective analysis of metadata (Mothafar et al., 2022). Furthermore, 236 documents from the ISI Web Science are analyzed to present the insights and classifications of the literature based on content analyses. These insights and classifications include conceptual development, drivers and barriers, collaboration with supply chain partners, human resource management, mathematical and other optimization models, and assessment of green supply chain management practices and performance (Ahmad et al., 2019). According to the study, there is a falling trend in research on green supply chain management's drivers or barriers to human resource management. However, misusing mathematical optimization models to improve decision-making in the quest for environmental performance is an increasing trend (Waseem et al., 2022). The survey also discovers a steady increase in the evaluation of green supply chain management practices and results. However, green supply chain management is an idea of human resource management. Began to acquire acceptance among academics towards the turn of the 20th century (Khokhar et al., 2022). This investigation discovers a significant increase in publications on the subject from 2010 to the present. Influential writers, top journals, top contributing nations, top contributing institutions, and contributions by disciplines are all identified in this study (HOU et al., 2021).

This study offers a comprehensive yet simple conceptual framework for managing a green supply chain in human resource management. The study's conclusions and recommendations for future research open up a new field for investigation and advancement in this field. The world's sustainability is now in grave jeopardy as a result of rising global temperatures and altering biodiversity ("Occupational Health & Safety Implementation Framework for Pakistani Construction Industry in Sindh Province," n.d.). The review uncovered three key features in current GSCM research: GSCM performance, GSCM practices and tactics, and GSCM in the newly appearing performance. Similar to this, it examined how green design affected the environmental performance of products and discovered that it had a favorable impact (Zeb et al., 2022). Other research has concentrated on the function of partnerships and collaboration in advancing GSCM practices. In improving the Malaysian manufacturing industry, for instance, we looked at a connection between cooperation between organizations and GSCM adoption and discovered that collaboration had a beneficial relationship with GSCM adoption. GSCM performance is the next theme that came out of the review. The relationship between GSCM practices and ET performance, including social, ecological, and economic performance, has been the subject of numerous research. For instance, (Tan et al., 2020). Studied Iranian manufacturing companies and discovered that GSCM practices had a favorable impact.

Similarly, Jabber and colleagues (2018) examined how GSCM practices and performance in society in Brazilian enterprises were related and discovered a favorable correlation (Khokhar et al., 2020). Other studies have also examined the effect of GSCM on the efficiency of supply chains. For instance, GSCM practices had a favorable impact on supply chain performance (Sultan et al., 2019). That looked at Indian manufacturing companies. Similar to this, I looked at the association between GSCM practices and supply chain resiliency and discovered that it was good human resource management. The third theme examines GSCM in light of new technology. The third element that came out of the review is the use of GSCM in



relation to developing technologies (Min & Kim, [2012](#)). Several studies have examined the function of cutting-edge technology like blockchain technology, artificial intelligence, and green supply chains and logistics (Khokhar et al., [2019](#)). GSCM practices and tactics are being promoted by the Internet and Things (IoT) in human resource management. For instance, we studied Chinese manufacturers and discovered that the application of blockchain had the potential to improve supply chain traceability and transparency in human resource management, which would support GSCM procedures (Khokhar, [2019](#)). On the effect of developing technologies on GSCM performance, research has been conducted (Onyango Muma et al., [2014](#)). For instance, examined how IoT affected GSCM performance and discovered that it had a favorable impact on human resource management. Similar to this, it investigated how artificial intelligence may support GSCM practices and found that it has the potential to increase supply chain sustainability and efficiency.

The foundation of green logistics is lowering energy usage with a focus on the environment and acquiring raw materials- mining, product manufacture, packing, shipping, handling product circulation, distribution, and delivery- which are all aspects of green logistics for people. Science and environmental management are also included. Process strategy for reverse logistics, in particular (Chinomona & Bikissa-Macongue, [2022](#)). Green things In Figure 2, the logistics are displayed. The practical value of green logistics is found in lowering energy usage, emphasizing environmental protection, and boosting economic rewards. It calls for the study of green construction. Supply chain management and logistics human resource management (Conradie & Lamprecht, [2018](#)). If the logistics sector so desires, it cannot be overlooked as it develops in the fiercely competitive worldwide market. Progressively more obvious environmental clues. Excellent environmental Conduct is a catalyst for progress, not a hindrance. Suppose you comprehend the significance of logistics and sustainable development (Sesay et al., [2018](#)) as technology advances and specialization levels rise. Notably, the GDP's proportion of all logistical costs fell. However, despite the logistics sector's continued overall expansion, low Price swings, poor growth, growth rates, and low profitability, Differentiation in the logistics sector has become more obvious for logistics organizations. Management expenses for builders will rise if the operating procedure and management do not have a sufficient understanding of green logistics. Internal flowchart for business retrieved (Mafini & Loury-Okoumba, [2018](#)) from the archive in Figure 3.

List the business's operating costs from 2007 to 2013. According to Table 1, the warehouse costs represent a sizable component of the total cost percentage. Costs associated with warehouses must be reduced. Green logistics refers to the implementation of environmentally sustainable practices and processes within the logistics industry. It aims to minimize the environmental impact of logistics activities, such as transportation, warehousing, and distribution, by reducing energy consumption, greenhouse gas emissions, and waste generation.

Methodology

Given the vulnerability and long-term viability of international supply networks, the uncertainty brought to light by the Covid-19 pandemic. Emerging technologies can be quite helpful in helping supply chains overcome these difficulties and adjust to an uncertain environment. Here are some strategies for using the latest technologies in human resource management to increase supply chain flexibility and sustainability. Blockchain: Supply chains can be made transparent and secure using blockchain technology, which can reduce waste and improve sustainability. To ensure that products are ethically sourced and sustainably transported, for example, it can be used to track their origin and transit.

Additionally, blockchain technology enables enterprises to monitor supply chain disruptions in real-time in human resource management. Intelligent Machines (AI): AI can help improve sustainability, waste reduction, and supply chain efficiency. AI algorithms, for example, can be used to predict demand patterns and optimistic inventory levels, reducing waste and the need for additional inventory (Raza et al., [2024](#)). AI can also be used to find bottlenecks in supply chain operations and suggest solutions in human resource management, including more efficient shipping methods or environmentally friendly packaging.

Internet of Things (IoT): Internet of Things devices can be used to track supply chain operations in human resource management, allowing businesses to react quickly to disruptions and reduce permitted waste. For example, sensors can be installed in storage facilities and transportation equipment to track

humidity, temperature, and other environmental variables that may affect commodity viability. It can be used to ascertain these facts. Ensure that items are transported and stored in the best possible ways, minimizing waste and increasing sustainability. By enabling the production of local goods, additive manufacturing can be used to reduce the environmental impact of supply chains in human resource management. As a result, there is less need to store and transport goods, which can dramatically reduce carbon emissions.

Additionally, 3D printing can make it possible to employ more environmentally friendly materials and minimize the quantity of waste produced during production. Robotics: By automating supply chain procedures in human resource management, robotics can lower the demand for manual labor and boost productivity. Lowering the power and resource consumption linked to manual labor can aid in decreasing waste and enhancing sustainability. By enabling the quick deployment of drones in the case of shortages of workers or disruptions within supply chain operations in human resource management, robotics can also be utilized to increase supply chain resilience in human resource management. As a result, in the framework of COVID-19, developing technologies present a variety of options to enhance the long-term viability and resilience of supply chains in human resource management. Organizations using these technologies. Can contribute to a more environmentally conscious future by reducing waste, increasing efficiency, and strengthening their ability to react to disturbances. An important research area is the role of productivity in mediating the relationship between sustainable methods of supply chain management and competitive advantage in human resource management, particularly in the backdrop of Bangladesh's garment manufacturing sector. One of Bangladesh's main export-focused businesses, this one has a sizable impact on the national economy. In the garment manufacturing sector, employing sustainable methods for managing supply chains can help to lower environmental pollution, ensure worker safety and well-being, and boost the sector's productivity and competitiveness. In that setting, the study seeks to ascertain the association between environmentally friendly supply-chain management practices, productivity, and edge over rivals in Bangladesh's garment manufacturing sector. Data for the study will be gathered from a sample of Bangladeshi clothing manufacturing companies using a survey-based research design. The presented hypotheses will be tested in the study using structural equation modeling (SEM). The first is that employing green supply chain management strategies in human resource management will increase output.

This hypothesis depends on the notion that adopting more productive production processes can result from using the management of sustainable supply chain techniques. The second theory holds that production increases competitive advantage. Increasing productivity can result in cheaper manufacturing costs, quicker delivery times, and higher-quality products, all of which can improve a company's competitive edge. The third theory holds that the connection between effective supply chain management strategies in human resource management and competitive advantage is mediated by productivity. This claim is supported by the notion that employing sustainable supply chain administration techniques can increase logistics, which could result in a competitive advantage. By presenting actual data on the connection between unsustainable supply chain management practices, the study will add to the body of knowledge in the context of Bangladesh's clothing manufacturing sector, productivity, and competitive advantage. The study's conclusions will be helpful for clothing manufacturing companies in the country and other developing nations looking to adopt sustainable methods to manage the supply chain in human resource management to boost their output and competitive advantage. A multi-stakeholder strategy is necessary to address the complicated issue of the long-term growth of small-scale producers in the coconut oil trade. The potential for smallholder farmers throughout the palm oil supply chain in human resource management to thrive sustainably can be shown through a thorough examination of the literature and thematic scientific mapping. Studies addressing the financial, environmental, and social impacts of the cultivation of palm oils on tiny-scale farmers may be included in the literature review, as well as any initiatives and measures that are being put in place to address these problems.

The relevance of land duration, access to credit, and access to markets for smallholder farmers are just a few examples of the major themes and trends that the thematic maps can assist in identifying in the literature. The following are some possible areas of attention for the environmentally friendly growth of small-scale cultivators in the supply chain in human resource management for palm oil, enhancing

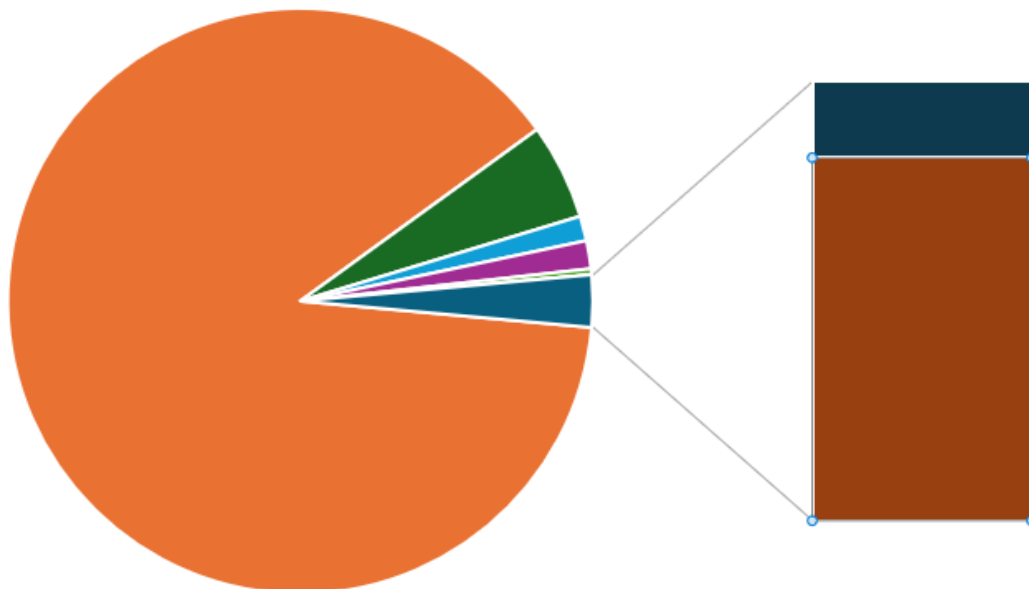


smallholder farmers' access to secure land tenure to guarantee the long-term viability of their agricultural practice. Expanding the availability of financing and financial products to assist smallholder farmers in making investments in sustainable practices and boosting their output. Encouraging the use of sustainable agricultural methods to protect biodiversity and lessen the effects of climate change, such as farming and inter-cropping. In this study, to guarantee that smallholder farmers obtain fair prices for their goods and have access to new markets, market access is being promoted, particularly through certification programs. Enhancing the ability of organizations representing smallholder farmers to advocate for the freedoms they were and bargain better terms with purchasers. In order for small-scale growers in the supply chain in human resource management of palm oil to develop sustainably, the government, civic culture, the private sector, and the smallholder farmers themselves must allow work together. Addressing the difficulties faced by smallholder farmers and fostering sustainable growth in the palm oil supply chain in human resource management will require cooperation and coordination among all of these parties. The field of sustainable computing, which is expanding, focuses on the creation and application of environmentally sound procedures in the planning, production, usage, and dismantling of computing infrastructure and systems. Networks, software, and hardware are all included in this. Sustainable computing and the subject of informatics are closely intertwined. The study of processing information and the creation of information systems is called informatics. Information science, computer science, and other related subjects are all included in this field. Because it offers the tools and methods required for developing and overseeing systems for sustainable computing, informatics is essential to this field, as shown in Figure 1.

Figure 1

The operation data comparison

Chart Title



- 2007–2013 operating data comparison table.
- project
- Cargo volume (tons)
- Operation votes
- Warehouse cost
- Labor costs
- Outlay cost
- total fees

Table 1

shows the 2006–2012 operating data comparison

project	2006	2007	2008	2009	2010	2011	2012
Cv	1200	8630	35410	67320	89760	91460	93210
Operation Vote	310	1020	3020	5310	7390	7790	7600
Wc	35.009	35.00	35.000	52.00	70.00	70.00	72.00
Lc	7.5000	7.50	12.00	16.00	23.00	25.00	26.00
Oc	11.030	21.00	23.5200	26.15	32.23	36.101	35.210
total fees	53.800	63.500	70.5200	94.15 00	125.20	131.11	133.21

Study of Environmental Problems brought on by the Number of Increasing the Logistic Company

An important phase in the development of the logistics business is rapid economic growth. The logistics sector is expected to grow quickly, which would hurt the environment and have an adverse effect on the economy because of indiscriminate pollution. The impact of logistics on the environment, which limits the economy and causes an inflow of animals, creates a periodic system [14]. The economic subsystem, the logistics subsystem, and the environmental subsystem have each been given their subsystem in the model as a result. Government monitoring corporate environmental governance measures are not in place from an ecological perspective. Sustainable computing also emphasizes the importance of systems thinking. A method called systems thinking places a strong emphasis on how interrelated systems and the necessity of taking the entire system into account rather than simply its separate parts. In this study, to comprehend the intricate connections between systems of computing and their environmental implications in the circumstances of sustainable computing, the concept of systems is crucial, as shown in Table 2.

Table 2

Statistics description

Environmental Pollution and Destruction Accidents	2006	2007	2008	2009	2010	2011	2012
economic loss	2110	1820	1910	1890	1410	1460	840
Value transportation industry	17780	12702	64410	3705	3666	10550	1341
W industry	59.4	58.9	63.7	67.7	179.5	93.8	100
Freight generated	534.7	37.9	241.4	44.6	652.5	670.2	699.2
Total	4669.1	5033.1	5458.2	6002.5	6672.5	8047.3	9304.5

In general, a holistic strategy that considers every phase of the life of computer systems is needed for sustainable computing. This study covers not only the development and production of hardware and software but also its upkeep and operation, as well as eventual recycling and disposal. Utilizing co-production technologies in the supply chain in human resource management can help with resource conservation, waste reduction, and sustainable manufacturing practices. It provides the opportunity to create a closed-loop system where waste is transformed into usable byproducts, reducing the need for virgin resources and the impact on the environment. Co-production technology can also create new business opportunities for those involved in the supply chain in human resource management, such as waste processors, producers, and collectors. It makes it possible to generate emerging markets for byproducts as well as new employment opportunities.

This will result in.

Can be calculated to be zero:

$$QL \text{ is equal to } At2 Pt1 + (P Pt1 b) t2 + t3 + (1). (1)$$

$$U2 = QP, T, Cs, Ch., \text{ and } E (2)$$

Logistics companies need to optimize their expected benefit.

$$Ch = Cf + 1 \setminus s2) 2 (3) (3)$$

Following its derivation and setting to zero, the following results:

$$Q = Pt1 + (Pt1 + b) t2 + (b + t3 + f)2(1 + t2) (4)$$



The predicted benefits of businesses in the logistic sector are measured, and the governance is measured.

$$F \text{ and } P \text{ are equal to } (1 - t_2) (1 - t_2 + t_2 l) + t_2 l^2 (2 - t_2) \quad (5)$$

$$\partial f / \partial \xi = W_s (1 - t_2)^2 - t_2 \quad (6)$$

When there is little oversight by the government, this demonstrates that it is harder to come up with monitoring actions than when national environmental monitoring is more expensive. The longer the logistics sector does nothing, the more likely it is that the authorities will watch it [15]. The less probable it is that the government will need to oversee it if the logistics firm decides not to act. Nonetheless, it is still important to demonstrate the deterrent effect of the penal system. Not only does the government need to enforce clear sanctions and step-up oversight, but logistics companies also need to be more driven to adopt environmental governance measures as a result of the above. Statistics, the pertinent information from the three systems used to monitor the government's environmental governance process in a particular region during the past few years, are displayed. Overall, the use of waste materials in the supply chain in human resource management has the possibility of helping transform waste management and improve sustainability. However, all parties involved, including legislators, business executives, and consumers, must collaborate if this promise is to be realized. Together, it calls for the use of cutting-edge technology that supports sustainable production techniques as well as a transition to a circular economy that gives the preservation of resources and waste reduction a higher emphasis. In the end, creating products from waste products in the chain of supply is additionally important for the environment.

Nevertheless, it presents a chance for business that might be profitable for society as a whole. Finally, the flaws of the study are addressed. In some situations, the OEM's winning tactic is letting the Centre Manager generate the co-product. Businesses involved in the process may profit from the byproducts created from leftovers. The technology used in production is an essential step in waste management. The profitability of the co-products, however, depends on how well the process supply chain functions in human resource management. To ensure the financial health of the byproducts, businesses involved in the production process must have a strong and well-organized supply chain in human resource management.

Figure 2

Depicts the supply chain's rapid response system

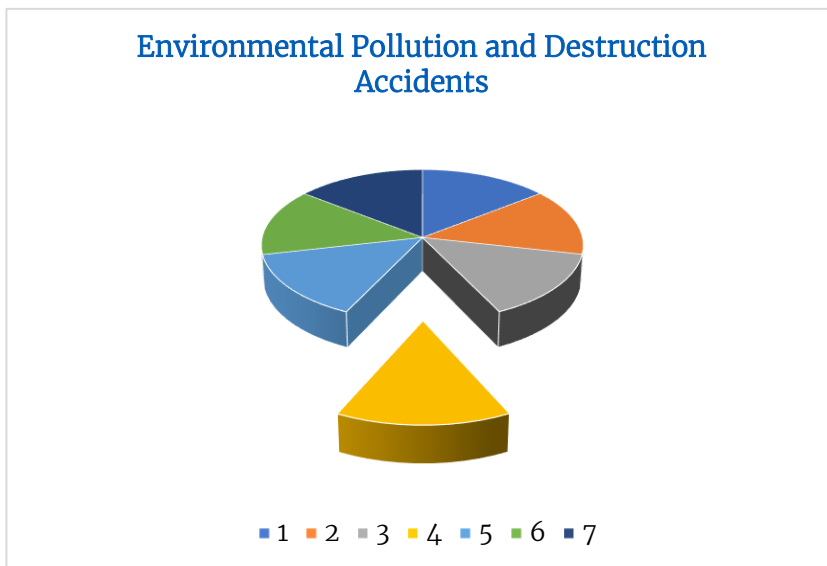


Figure 2 shows the Supply chain for the logistics sector. This financial service uses big data, d quickly, and it will react to businesses on various chains very swiftly [21]. As the demand for the byproduct increases, the co-products material limitation is forced into compliance. In line with the increased demand for the co-product, the ideal proportion of the conventional commodity also rises, increasing both material utilization and Waste substance. In actuality, environmental organizations and governmental organizations advise consumers to purchase eco-friendly products like co-products made from recycled materials for the purpose of protecting the environment, which demonstrates why such a strategy might not work. The output of the traditional product will increase due to an abnormally high demand for the

co-product, which will increase material waste and be harmful to the environment. Customers should benefit from rivalry in general. The OEM increases the wholesale price of scrap materials on purpose as it depends more on the Cm's cooperation to divide the introduction. Profit. In other words, the increase harms all consumers by reducing the market competitiveness of the two producers. OEM introduction has a different effect on consumer surplus since the OEM has a monopoly on the market. Some consumers who would have bought the standard product are more likely to buy the co-product as it increases. In order for the material restriction on co-production to become legally obligatory, it must be sufficiently large, which means that their co-product is outstanding. The greenest customers, however, are unable to recognize the elevated value they place on environmental preservation due to the lack of a co-product.

Additionally, the increase maintains the market clearing price of the co-product growing. Consequently, consumer surplus decreases. Abruptly, which ultimately results in a reduction in social well-being.

The Internet of Things provides the foundation for this rapid response system. An "Internet of Things" in the realm of commerce and circulation is created by connecting it to GPS, intelligent mini-containers, and cars. In order to accomplish the "speaking" of the items, shorten the delay, and lessen the loss of commodities. Information is shared throughout all cars, stores, communities, and warehouses. The micro-container drop-and-hook technology means that all products don't need to be transported or delivered using a reliability matrix. The supply chain in human resource management dependability evaluation matrix method's steps are as follows: Choose evaluation criteria and suggest a set of criteria factors; divide the assessment criteria into equal parts and establish the criteria in accordance with the evaluation requirements; assess each risk component to derive the evaluation matrix and the weight matrix and execute mathematical operations; compute the findings of each enterprise's risk assessment. O_i and describe it as the company's dependability. P_j denotes the importance of the risk factor, and a_j represents the enterprise's i 's evaluation value for the risk factor j

It is possible to express how reliable the complete supply chain in a human resource management system is.

$$P1 \text{ is equal to } 1 \text{ (3 } P_{i1.2}) \text{ (4 } P_{i2.5}) \text{ (1.7 } P_{im}) \text{ (15)}$$

$$P = P3 \times p4 \times 1 \times Pn \text{ (15)}$$

$$P1 = \sum m$$

$$Pm = P1 + P2 + P_{cai} \text{ (18)}$$

Assuming that $b_1, b_2,$ and represent the fraction of sellers in merchandise sales, the formula is as follows:

$$q = \sum k$$

$$I = 1 \text{ } b_{ij} \times l_k \text{ (} y_k \text{) } dy_k \text{ (19)}$$

Therefore, $P = P1 P2. Pm q$ represents the likelihood that the rated production task can be completed normally.

Table 3

Total risk impact value

Z	A1	A2	A3	W
A3	3	1/3	1/3	0.106
A4	4	7	8	0.634
A5	5	1/5	7	0.260

Table 4

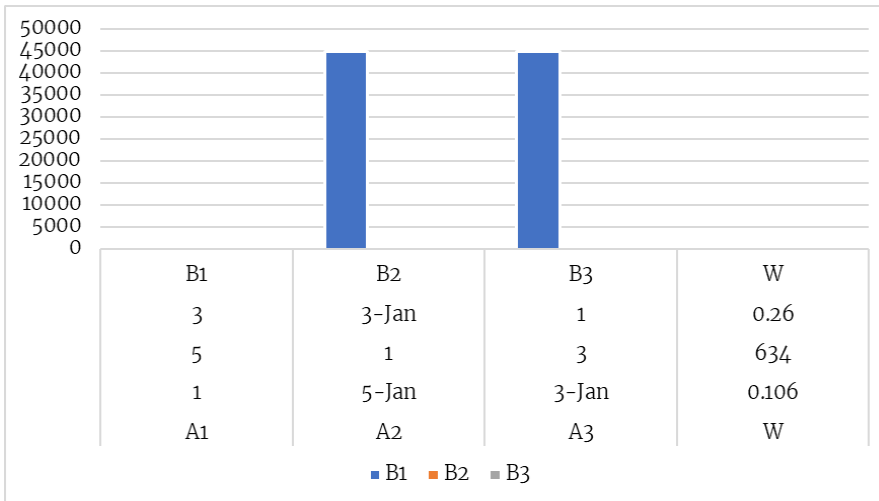
Ranking of external risk factors

A2	B1	B2	B3	W
B3	3	1/3	1/3	0.143
B4	4	2	2	0.429
B4	4	2	2	0.429



Figure 3

shows the environmental impact of packaging and loading



The phrase "circulation processing" is broad. The production process determines what constitutes simple operations. Simple processes like assembling, clamping tags, plaster marks, dividing, measuring, sorting, etc. Recycling purification will have a significant negative environmental impact because it is the only activity that can determine how much a product is worth in logistics activities. Figure 3 shows the effects of recycling, which produces a significant amount of corner residues that cannot be recycled, which leads to additional pollution. Based on our study as described in Table 3 and Table 4. As social welfare rises, it first rises but eventually drops if it reaches sufficiently high. The sum of the surpluses of producers and consumers is social welfare. In the subsequent analysis, we discuss the impact of knowledge on the two producers as well as the consumers. Intuition is consistent with the total producer surplus increasing over time. The entire consumer surplus, however, may be on the decline. In addition, we find that the causes of the fall in consumer surplus are different under both co-production systems. Customers gain from the additional option of buying a co-product with the opportunity to get a conventional product for less money. Though this is not always the case, GM co-production can sometimes improve public well-being. Keep in mind that in-house co-production would harm O Em's reputation and cause consumers to value conventional products less, which would be detrimental to both surplus for themselves and consumer surplus. First off, CM co-production benefits society in every situation. A CM co-production, as opposed to NO production, may actually be more advantageous for both surplus production and consumer surplus.

Market segmentation may allow the availability of co-products to benefit from Attracting co-conscious customers who are willing to pay more for environmental protection. The overall surplus for themselves will increase as a result. Based on the wisest decisions taken in Section 3, we can determine the. The OEM and CM's profits are shown in each sub-game. Appendix. Regardless matter whether OEM co-production is permitted, the CM does not access the market and generates no money. As a result, the. Naturally favorable. The co-production method is CM. The following pitch is ideal for the original equipment manufacturer (which is what renders this collaboration technique so effective. Due to their length of complexity, the threshold expressions are listed in the appendix. When there is manufacturing co-production, the OEM makes the best decisions. Be aware that O.1 and Proposition item (ii) may both be less than 0.2 in certain situations.

As demonstrated by proposition 1, if the share of the small green buyer market, the original equipment maker does omit to make the byproduct. Otherwise, the OEM will supply the co-product. If the component of. Inferring from the fact that co-production, that is, given the size of the green buyer market. The object of Proposition. The OEM strategically increases the output of the traditional product when the nonproductive materials requirement is 2. binding in order to produce more residual materials for the co-product. That is the reason why. The ideal manufacturing rate for the conventional product could increase in the future. Considerably different from the perspective of theoretical modeling, the output of the original

product, or in other words, how many materials were used to make it, limits the volume of the re-manufactured product even when manufacturing recovers the residual value of end-of-use products.

In the initial production, by using materials that were not used in the original manufacture and making use of the byproducts of the original product, production techniques reduce the amount of the co-product. Environmental laws also encourage the use of sustainable manufacturing methods like green chemistry in order to decrease waste creation. By utilizing ecologically friendly products and procedures, employing green chemistry lowers the production of hazardous waste. Businesses are required by the Pollution Prevention Act of 1990 to apply green chemical methods to decrease waste generation. Environmental regulations also play a significant role in promoting recycling by requiring the development of recycling programs and the implementation of recycling practices.

Environmental legislation must be continually developed and strengthened in order to ensure that waste management operations are carried out in a way that safeguards the environment. This significant divergence compels us to reevaluate the best management approach for third-party production. We discovered that third-party co-production may be advantageous for O Ems. Unexpectedly, the cost per unit of raw materials can boost the Cm's profit. In addition, Customers' higher readiness to pay for the co-product can lower the CM's profit and worsen the industry's environmental conditions, according to research on consumer environmental consciousness.

There are several hidden nodes in that the flow of products is chaotic, which readily results in low overall benefits; long processes and numerous nodes quickly cause the accumulation to grow.

Individualized tendencies and differences in demand density are high, making service accuracy challenging to grasp. 4. The poorest neighborhoods and downstream node locations are primarily small businesses, along with tiny shops with little financial resources, making the supply chain in human resource management brittle. The logistics industry is highly competitive, and e-commerce has permeated virtually every sector of commerce and agree-culture, altering employee practices and way of life. Of course, acting. An independent firm's method of leadership does not correspond with an effective supply chain in human resource management. Numerous small businesses and outlets coexist and perish alongside the logistics sector from the viewpoint of the ecosystem of the logistics industry. As a result, this supply chain in human resource management needs to take the management of these small businesses, which are the "strong" of the market and "weak" of finances. In order to do this, a support supply chain link based on the "Golden Bridge Alliance" is created to offer credit-based financial services to these shops, outlets, and small processor businesses, thereby boosting the competitive edge of the entire food service sector.

Results

Logistics businesses prioritize their financial interests. If there are no national system guarantees, environmental protection rules, or effective public oversight and controls, Departments and logistical firms will pollute the environment uncontrollably. Serious environmental contamination issues will diminish social welfare and potentially result in negative social welfare. Depicts a study of the size and development of national social logistics. The findings show that the logistics sector's structural restructuring has sped up the development of new kinetic energy. The logistics sector's overall social value has risen steadily in recent years. Demand and consumption in people's daily lives have emerged as a major engine for the expansion of logistics. According to the data, it is not difficult to conclude that residents' need for online shopping accounts is the main reason for the increase in the logistics sector. The e-commerce logistics market is expanding overall. In 2016, an examination of the overall amount of e-commerce logistics from 2016 to the first half of 2017 was conducted: The negative influence on the environment has increased significantly, even if the total number of social logistics and other logistical systems is expanding quickly. The overall growth rate of e-commerce logistics from October to November for the entire year of 2016

The environmental impact of packaging, loading, and unloading during logistics activities increases space and time efficiency. The phrase "circulation processing" is broad. The production process determines what constitutes simple operations. Simple processes like assembling, clamping tags, plaster marks,



dividing, measuring, sorting, etc. Recycling purification will have a significant environmental impact because it is the only activity that can form the product value evaluation in logistics activities. This impact is seen in the fact that many corner residues in the recycling process cannot be reused, leading to new pollution. Green transportation must adhere to the development of new energy-saving transportation technologies and restrain the expansion of multi-modal transportation distribution in order to be realized. Routes. At the same time, the government changed newly made automobiles for use in addition to setting severe effluent requirements. At the same time, it promoted the development of the movement of newer cars and implemented policies, including shortening driving distances and lengthening shifts. Additionally, after adoption, there will be a significant decrease in car pollution emissions, according to data on diesel vehicle emissions of nitrogen oxide (NO_x) and particulate matter (PM) in the logistics sector between 2015 and the first half of 2018.

The data above makes it abundantly evident that under the application of laws and procedures, the nitrogen oxide (NO_x) and particulate matter (PM) emissions from diesel vehicles in 2015 and 2016 have demonstrated a downward trend. The environmental impact of green transportation has significantly improved, despite the fact that the number of logistics transportation has not dropped and the total volume of logistics has increased. Businesses adopt green logistics and use data from the Internet of Things to inform warehouse operations and increase productivity; logistics transport vehicles increasingly switch to new energy vehicles to cut carbon emissions; Degradable materials are used in place of the product's outer packaging. The amount of logistics and express delivery has expanded with the growth of e-commerce. Still, at the same time, the environment has become more polluted due to the express packaging, filling, and other rubbish that is seen everywhere. Express delivery typically uses unit-directional packaging, meaning that there is no recycling of boxes or wrapping paper and that some packaging materials even emit significant amounts of pollution. It poses a significant environmental strain. Sustainability is the ultimate goal of green logistics. Relating to rights for customers and general public interests as well as the logistics sector, various government agencies, etc. It is the economic unification. Environmental, social, and personal interests. The economy of the country is demonstrating a consistent growth trend, urbanization is quickening, and environmental protection is increasingly becoming more and more of a concern for the populace. The development of the logistics industry towards high efficiency, energy conservation, and preservation of the environment must be unabated with the ongoing promulgation of pertinent national legislation.

Conclusion

Every logistics company works continually to raise the bar for green logistics building and quicken the transition to a greener economy. Businesses adopt green logistics and use data from the Internet of Things to direct warehousing operations and increase productivity. In this study, logistics transport vehicles gradually switch to new energy vehicles to reduce carbon emissions, and the outer packaging that shields the goods is replaced with biodegradable materials. The amount of logistics and quick delivery has expanded due to the growth of e-commerce but at the expense of Items being swapped out for biodegradable ones. Fast delivery and logistics volume have developed with the development of e-commerce, but at the same time, the quick. There is litter everywhere, including packaging, filler, and other waste, and the ecosystem has been contaminated. Express delivery typically uses unit-directional packaging, meaning that there is no recycling of boxes or wrapping paper and that some packaging materials even emit significant amounts of pollution. It poses a significant environmental strain. Sustainability is the ultimate goal of green logistics. It is the convergence of economic, social, and environmental concerns. The urbanization process is speeding up, the national economy is demonstrating a consistent growth tendency, and environmental conservation is gradually coming to the fore among the populace. The logistics sector must continue to expand in a way that is unstoppable in terms of high efficiency, energy conservation, and environmental preservation. The plan may include the use of alternative fuels, such as electric vehicles, the implementation of energy-efficient practices, such as green buildings, and the adoption of sustainable packaging materials, such as biodegradable materials. The phrase "circulation processing" is broad. The production process determines what constitutes simple operations. Simple processes include plaster markings, dividing, measuring, sorting, clamping, tagging, construction, etc. Reusing materials purification will have a significant environmental impact because it is

the sole operation that can form the product value evaluation in logistics activities. This impact is seen in the fact that many corner remnants in the process of recycling cannot be reused, leading to new pollution. The findings show that the logistics sector's structural restructuring has sped up the development of new kinetic energy. The logistics sector's overall social value has risen steadily in recent years. Demand and consumption in people's daily lives have emerged as a major engine for the expansion of logistics. The logistical requirements of social residents have increased recently.

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