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THE ROLE OF GREEN VALUE CHAIN (GVC) STRATEGIES AND CLEANER PRODUCTION (CP) IN REDUCING COSTS

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Abstract:

The research seeks to investigate the (GVC) and identify the activities required to manufacture environmentally friendly green products beginning with green R&D and ending with green reverse supplies as well as assisting the Industrial enterprises management in the recycling of production waste and achieving cleaner production quality and cost-effective equipment. And the research concluded a set of conclusions the primary one of which is that the use of the (GVC) and cleaner production reduces emissions waste generated increases operational efficiency preserves Industrial enterprises resources reduces waste disposal costs and creates new investment opportunities.

Keywords: Green value chain (GVC), cleaner production (CP), Green products, Reduce costs.

THE INTRODUCTION:

Industrial enterprises suffer from significant losses as a result of not investing in natural resources and recycling production waste as a result of the lack of modern technology represented by machines, equipment and contemporary production techniques, which has a negative impact on atmospheric air pollution as a result of waste and loss of production waste and in light of the developments represented by gas emissions into the atmosphere and high costs. The low quality of products and the lack of modern technological equipment necessary to recycle production waste and manufacture traditional products that are harmful to human health and dangerous to the environment. Traditional cost techniques have become useless in solving environmental pollution problems, as these techniques do not provide appropriate information in alleviating the problems of waste and loss of natural resources. Gas emissions and exacerbation of global warming.

From this standpoint, we have moved towards using the (GVC), which contributes to assisting the management of the Industrial enterprises in manufacturing green, environmentally friendly products by directing the main activities necessary to manufacture the product towards environmental requirements, controls and standards, achieving optimal exploitation of energy, natural resources and raw materials, recycling production waste and moving from Traditional production of cleaner production, to enhance the value of the Industrial enterprises and add value to the customer. The (GVC) works to reduce costs through its activities that begin with green R&D activity and end with recycling activity or green reverse supplies by converting production waste into raw materials for manufacturing activities as well as canceling non-productive activities. Environmentally friendly and has a negative impact on the environment, for which the customer is not willing to pay and replace it with environmentally friendly green activities, which leads to improving the quality of the product and enhancing competitiveness.

THE GENERAL FRAMEWORK OF THE STUDY AND PREVIOUS STUDIES

1. The General Framework Of The Study

First: The Research Problem

Most Industrial enterprises suffer from increased amounts of waste and waste in natural resources and raw materials, which has a negative impact on environmental pollution through the release of these resources into the atmosphere, as well as the manufacture of low-quality traditional products that are harmful to human health and dangerous to the environment. On the other hand, these units suffer from large losses as a result of high costs within all stages of manufacturing and marketing of the product. In light of this, the research problem was identified through the following two questions:

1- Does using the (GVC) contribute to helping the management of the Industrial enterprises reduce costs and improve product quality?

2- Does the use of the (GVC) contribute to assisting the management of the Industrial enterprises in recycling waste and production emissions, as well as manufacturing green products and achieving cleaner production?

Second: The Importance Of Research

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The importance of the research stems from the following:
1-Explaining the role of the (GVC) and cleaner production in assisting the management of the Industrial enterprises in reducing costs and achieving competitive advantage by increasing the efficiency of resource and energy use and eliminating non-value adding activities.
2- Explaining the importance of cleaner production strategy in reducing waste and unnatural spoilage.

THIRD: The Goal Of The Research

1- Statement of the cognitive foundations of the (GVC) and cleaner production.
2- Helping the management of the Industrial enterprises to reduce environmental pollution rates, recycling production waste, and manufacturing green products, as well as achieving cleaner production.
3- Helping the management of the Industrial enterprises to reduce product costs according to the analysis of the (GVC), as well as improving quality and according to marketing specifications.

FOURTH: Research hypotheses

1- Using the (GVC) and cleaner production helps Industrial enterprises reduce costs and achieve a competitive advantage.
2-Using the (GVC) and cleaner production contributes to providing environmentally friendly products.

Fifth: Research Methodology

The research adopted the theoretical analytical approach to study the research variables through relevant literature for the period (2007-2022) and to identify expected areas for cost reduction.

2. Previous studies

Using the (GVC) contributes to reducing the pollution caused by burning hundreds of tons of liquefied petroleum gas, recycling it as a new product, improving its quality, getting rid of the sulfur content, and reducing the price of the gas cylinder. **(Abdel Qader, 2019)**
As Al**-**Sultani explained the cleaner production strategy contributes to improving the quality of products and producing environmentally friendly products by integrating environmental considerations with product design and reducing the impact on the environment. There is a relationship between cleaner production costs and quality costs. While cleaner production costs improve product quality, a high-quality product contributes to Achieving environmental sustainability due to its minimal impact on the environment during its life cycle. **(Al-Sultani, 2020)**
As da Silva added the use of cleaner production techniques has a positive impact in increasing productivity, product quality, worker safety, reducing cost and improving environmental performance by reusing water, reducing waste, reducing environmental accidents and replacing toxic materials. **(da Silva et al.,2020)**

First: The concept of the (GVC)

(GVC) is a new term that arose in response to the needs of sustainability and the green environment. The following are some of the viewpoints expressed in regard to this concept:
1. A set of actions carried out by industrial businesses in order to fulfil social, economic, and environmental goals through acquiring inputs, producing and processing outputs, handling, storing, and shipping items, marketing the final product, and recycling and disposing of used goods. **(Tan&Zailani,2009:239))**
2. It is a series that begins with R&D and ends with recycling as activities to improve environmental performance, reduce pollution costs, and achieve a sustainable competitive advantage. **(Kung & Cheng, 2012:112)**

Second: Advantages Of The (GVC)

1- Achieving a long-term competitive edge in such a way that it improves the requirements to remain in the market for the longest possible period as a result of fulfilling the obligations imposed on it by applicable environmental legislation and laws, as well as satisfying customer requirements by producing safe green products that do not harm humans and reducing pollution rates.
2- Cost savings are achieved by the reduction of trash, gases, and hazardous emissions, which results in lower fines and green taxes, as well as lower handling and maintenance expenses as a result of clean engineering practices.
3- Improving product quality through collaborating with reliable suppliers who adhere to environmental rules, as well as improving the quality and efficiency of manufacturing processes.
4- Enhancing the Industrial enterprises reputation for its contribution to pollution reduction and green product production.
5- Saving natural resources and energy by reducing the number of materials used in manufacturing, many of which are recyclable or biodegradable.
6- Creating recyclable and bio-disposable items to reduce waste. **(Al-Gharibawi: 2021:23)**

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Figure No. (1) Advantages of using the (GVC)

Third: (GVC) activities

The (GVC) is a collection of activities that start with green R&D and end with green recycling. These actions will be described below:

1- Green R&D

R&D work is the primary source of technical innovation, particularly in major economic entities with strong material and human capacities. The (UNESCO) Institute for Statistics defines it as "every creative work practiced on a systematic basis with the aim of increasing the stock of knowledge, including knowledge specific to humanity." Culture, civilization, and the application of this richness of knowledge to create new applications **(Al-Haddad, 2014: 21).**

Interest in green R&D is gaining popularity, many of the results associated with R&D activities are intangible and may take a variety of forms, including the accumulated stock of knowledge in Industrial enterprises related to production techniques, as well as acceptance of the application of knowledge new technologies are being developed in order to gain a competitive advantage **(Khazal, 2019: 251).**

Green training and development are defined as a set of activities that focus on strengthening employees' skills and knowledge while also providing them with work practices that reduce waste, make better use of resources, and conserve energy. It also provides an opportunity to engage employees in contributing to the solution of environmental problems and to inspire them to come up with new ideas. It boosts green innovation. **(Bangwal, 2015:48) & (Tiwari.**

2. Green design.

Green design, also known as environmental design, refers to environmentally friendly design as a range of actions that try to decrease the usage of materials or employ recyclable resources while using non-polluting techniques and minimizing the energy consumed in manufacturing. **(Chan & Lettice, 2012:34).**

The importance of green design lies in the following: (Al-Taie, 2018: 42).

1-Creating environmentally friendly, health-safe products.
2-Reducing waste and raw material losses by using more efficient equipment.
3-Differentiating the product offered by industrial enterprises from rival products.
4- Lowering production costs by more efficient and environmentally friendly technology.
5- Building a positive green image for industrial enterprises and portraying it as a societal benefit.

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6- Meeting clients' needs by obtaining environmentally friendly items at competitive pricing.

3. Green manufacturing (Kung & Chen, 2012:115)

Green manufacturing is one of the modern and contemporary activities in production and operations management because it is a method that decreases industrial waste by using new methods and methods in producing items that do not hurt humans or the environment. As a result, it is regarded as one of the greatest techniques for increasing manufacturing efficiency in industrial enterprises around the world. This is manufacturing that lowers waste linked with energy and resources in order to ensure environmentally friendly manufacturing processes and the manufacture of recyclable or reusable products. Effective green manufacturing must be built on the following pillars: **(Al-Taie, 2018: 47)**

1-Make products recyclable Products must be developed so that their components can be reused multiple times.

2-Using recycled materials by collecting used products, processing them, and reusing them in the manufacturing process.

3-Using raw materials that are not environmentally harmful: that is, determining the properties of raw material components and excluding items that are detrimental to the environment.

4. Using lighter materials and components: This helps to greatly reduce the number of resources consumed.

5-Reducing energy use: This is accomplished through lowering the energy used in manufacturing operations as well as the energy consumed by the product when in use.

6-Increasing the efficiency of resource use: The percentage of materials utilized in the product is lowered by increasing the efficiency of its production processes and reducing damage and loss throughout the manufacturing process, hence limiting costs and ensuring environmental safety.

4. Green marketing

Green marketing emerged in the late 1980s and early 1990s, after the rise of discussions about the function of marketing and its value to society. Green marketing, also known as environmental marketing or sustainable marketing, is a new idea that evolved as an extension of that. It was defined as marketing actions that promote fewer damaging products and services while helping to reduce the negative social and environmental repercussions of present products and production processes.

5. Green distribution.

Green marketing activity emphasizes the need of employing environmentally safe modes of transportation, as the aims of industrial businesses can only be met by implementing a clear and solid plan to distribute its products to clients on a big scale. Green shipping is "the process of taking into account environmental considerations in moving environmentally friendly products from Source to Customer: "The most essential issues in green distribution activity are minimizing energy and resource use as well as emissions to decrease global warming.

6. Green services.

The growing interest in the environment has made industrial enterprises more responsible to the environment, and many of these units have invested in this trend to gain a competitive advantage by preserving the environment by providing green products, and from this the concept of green services emerged. Green services are all operations carried out by the producer to allow the client to get the most out of products and services while protecting the environment and decreasing waste and energy usage. **(Al-Gharibawi, 34: 2021)**

7. Recycling and disposal.

The notion of recycling activity encompasses numerous chances to minimize natural resource use and pollution, while garbage has been identified as a resource that can be recycled. The waste recycling process is inextricably tied to green manufacturing processes, and recycling has been defined as any method that allows the Industrial enterprises to utilize industrial waste. And utilizing it in other works with no negative impact on individuals or the environment.
(Hassan, 2019: 47)

The (GVC) activities through which Industrial enterprises seek to add value to the products and services they provide, as it shows a map of activities that add value to be enhanced, and then other activities that consume energy and materials and do not add value to the products are excluded, while ensuring the lowest level of pollution possible. The following figure depicts the close relationship between what the (GVC) provides in terms of increasing the efficiency of using resources and energy, lowering costs, and lowering pollution, and achieving sustainable development and gaining a competitive advantage to ensure that Industrial enterprises remain in the market for the longest possible period.

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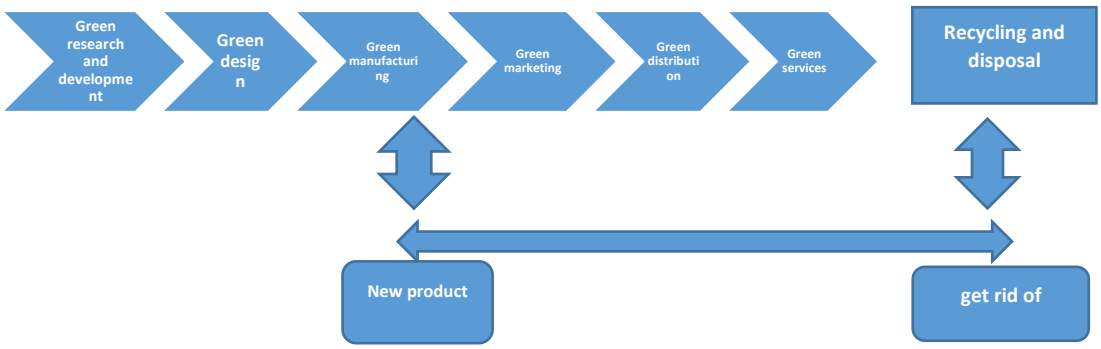
Figure No. (2) Group of (GVC) activities



Source (Al-Gharbawi, 2021)

The second requirement: cleaner production

Cleaner production technology is one of the contemporary technologies that is concerned with drawing up preventive measures that support preventing the generation of waste from the source. In this way, it differs from other technologies in the same context, such as the end of the pipe, which focuses on finding the necessary methods to reduce and treat waste after its generation. What has been covered in the literature that has been subjected to technical discussion will be reviewed. Cleaner production and application mechanisms, as well as the most important obstacles that accompany the application to make it easier for the Industrial enterprises to work with it to reduce the generation of waste and waste and achieve sustainability in resources.

First: The concept of cleaner production (CP)

Cleaner Production (CP) is a broad concept that represents one of the most important approaches to environmental protection. It aims to improve the efficiency of natural resources, the efficient use of energy, the reduction of risks to the environment and human life, and the reduction of the environmental impact of manufactured products throughout their life cycle. **(Scarazzato, et al., 2007:22)**. This concept differs from the concept of end-of-pipe (EOPS) technologies, which are concerned with treating or transforming waste emitted from the production process after its generation (i.e., waste from the production process), and it deals with waste as a by-product, and also separates pollutants and hazardous materials and treats them permanently, or disposing of them and burying them using scientific methods is followed, which reduces harmful emissions of waste. However, there are some criticisms surrounding it, perhaps the most prominent of which is that it requires high costs to carry out treatments, in addition to wasting the waste resources themselves.

Definition of cleaner production:

1. It is about utilizing less and more efficient energy and materials, as well as replacing the most toxic (for the environment and health) products with less hazardous products. **(Hens:2018:3323)**
2. A technology that allows increasing the efficiency of the production process in terms of the use of raw materials or the safe disposal of products in a way that ensures ending the connection between sustainable economic growth and environmental pollution within the framework of continuous development. **(Madahi, 2022: 79)**
3. Cleaner production (CP) can also be defined as an integrated and ongoing preventive strategy used to products, processes, and services to increase efficiency, which in turn improves environmental performance and lowers costs. **(Chang,2020:167)**

Second: The basic principles of cleaner production

Researchers and pioneers in the field of cleaner production have addressed a series of main principles for this concept, as **(Johor, 2012:10)** believes that there are five principles of cleaner production, which are as follows:

1- Eliminating and reducing waste: This principle includes eliminating all types of waste and losses in liquids, gases, heat, solids, etc.

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2-Pollution-free production: It takes into account reliance on ideal production processes through a continuous, sequential, closed loop completely free of any polluting emissions.

3- Production energy efficiency: The concept of cleaner production requires high levels of efficient energy and is expressed by the highest ratio of energy consumption compared to product outputs. Energy conservation is represented by reducing its consumption.

4-A safe and protected work environment: Cleaner production reduces the risks that workers may be exposed to while performing their work to a minimum, which leads to making the workplace a healthier, safer and cleaner work environment.

5- Environmentally friendly products: The final products must be as environmentally friendly as possible. Cleaner production focuses on studying all the environmental and health factors of the products and processes. This is done in the early stages, starting from the design stage of the products and throughout their life cycle from the manufacturing process to consumption and then landfilling.

Third: The importance and goals of cleaner production

A- The importance of cleaner production

1- Using natural materials and energy with high efficiency: This is the result of striving to reduce waste in the use of natural resources and recycling the resulting materials and waste in a way that contributes to achieving sustainable development and protecting the environment. As for rationalizing the use of energy, this is done by increasing its efficiency and reducing what is wasted without reducing the time of its use.

2- Achieving economic benefits: Natural materials must be treated like any exhaustible commodity, which requires the Industrial enterprises to deal with natural materials with care through the use of efficient economic methods. This is what made the Industrial enterprises adopt cleaner production technology in preserving their natural materials by rationalizing the consumption of materials and the like. It brings economic and environmental benefits.

3- It reduces negative impacts on human health and the environment: Many Industrial enterprises are adopting cleaner production to avoid the environmental impacts resulting from their operations, which requires drawing up policies and making strategic decisions to develop alternatives that will preserve human health, natural resources and the environment alike.

B- Objectives of cleaner production technology:

Cleaner production aims to raise the efficiency of using raw materials, energy, and water, and reduce waste and emissions at the source **(Ombis, 2012:44),** rather than dealing with them after they are produced, and to contribute to increasing the production and productivity of Industrial firms, as well as contributing to improving the design of products to be more environmentally friendly. It is lower in cost and more effective during its life cycle. The main goals of cleaner production are as follows **(Schaltegger, 2008:7):**

1- Reduces operating and waste management costs.
2-Increasing the efficiency of using materials, reducing waste, and reducing waste and emissions.
3- Reducing risks to employees and improving worker health and safety.
4-Raising environmental awareness of various individuals working in the economic unit.
5-Improving plant operating efficiency and energy efficiency, increasing productivity and competitiveness.
6- Recovering and reducing wasted materials and eliminating inputs that are harmful to the environment.
7- Improving the image of the Industrial enterprises through its commitment to environmental laws and instructions.
8-Proving environmental compliance with the economic unit, reducing fines and environmental taxes, and improving the relationship with bodies concerned with the environment.

It is clear from what was mentioned that cleaner production aims to make private activities in the Industrial enterprises safer, whether for workers, consumers, or the surrounding community in the economic unit. It also seeks to reduce resource consumption in order to preserve the rights of future generations, as well as enhancing the competitive position of the Industrial enterprises by raising its level of efficiency.

Fourth: Cleaner production strategy

Industrial enterprises are increasingly seeking to possess advanced production methods in order to improve their performance on both the economic and environmental levels alike. Cleaner production strategies are one of these methods due to their major role in improving environmental efficiency. This is done through a group of processes that classify the strategies of the processes involved in production. Cleanliness refers to the four strategies (Reduce, Reuse, Recycle, Remanufacturing) which are called 4RS for short, which are: **(Al-Gharibawi, 52:2021)**

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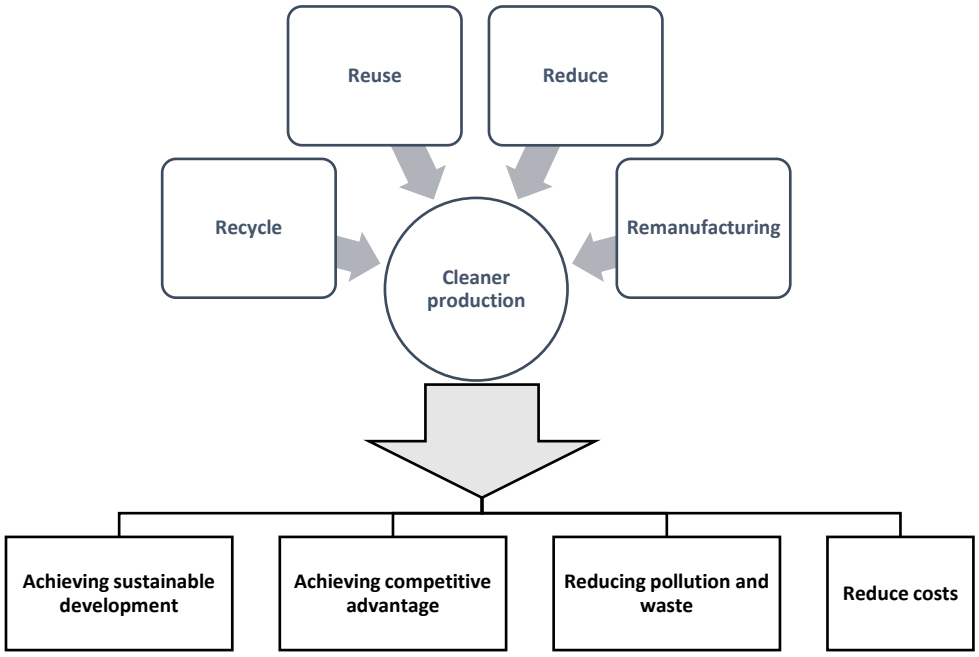
1. Reduce: It is a strategy that reduces the environmental impact of the Industrial enterprises by reducing waste generation, which leads to increased productivity and reduced costs.
2. Reuse: These are the processes through which products and raw materials are recovered with the aim of using them after the end of their productive life, which can provide good opportunities to benefit from the materials and products again.
3. Recycle: It is a mechanical process that the product goes through to change its shape. Its purpose is to transform the product into a new product. It is used when it is not possible to reduce or reuse.
4. Remanufacturing: The process of transforming worn-out, defective, or neglected durable products into new products or better condition products through the process of disassembling the products for cleaning, renewal, reassembly, and testing.

Figure No. (3) Cleaner production strategies.



Source: Prepared by the researcher based on the above

These four strategies provide a set of solutions by preventing or reducing waste in the consumption of resources and energy, or by reusing products to achieve maximum benefit, or by recycling materials to reduce the effort and energy spent on extracting these materials or remanufacturing them and benefiting from the useful parts of them to preserve resources. And energy, which leads to reducing costs and waste, as well as improving the quality of products, which achieves a competitive advantage and sustainability of resources.

Third requirement: The role of the (GVC) and cleaner production in reducing costs

The (GVC) is characterized by its role in drawing a clear vision that contributes to diagnosing the activities and processes that add value to highlight the potential for enhancing them, and those that do not add value to the product or service are deleted and disposed of, and the resources and energy they were consuming are directed to activities that add value, taking into account environmental regulations and requirements in all areas. activities. While cleaner production

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strategies are responsible for increasing the efficiency of these activities through techniques and ideas that reduce the use of resources and energy, the following is an explanation of the contribution of (GVC) activities and cleaner production techniques to reducing costs and achieving competitive advantage, divided into three stages:

The first stage (pre-production):

At this stage, a map of activities that add value is developed along with an analysis of the product's life cycle to identify the stages that cause pollution and treat them in the activities that precede cleaner production, which will be explained as follows:

A- Green R&D: This activity aims to create and generate ideas and suggest technologies, mechanisms and resources that reduce toxic emissions and harmful effects of the environment. It also contributes to increasing the value of the Industrial enterprises by improving other activities of the (GVC) and cleaner production through innovation of green products, technologies and clean processes that lead to reducing Environmental impact and waste reduction and recycling, which reduces disposal costs and reduces the costs of purchasing raw materials, which increases the efficiency of inputs, processes and outputs in the cleaner production process.

It can be said that the most important reason for the continued survival of the Industrial enterprises is the interest in green R&D activity, as it achieves the development of its activities and technologies to suit environmental regulations, laws and requirements, as well as raising the efficiency of its operations and continuously improving the specifications of its products, in addition to green innovations in products and technologies, for which green R&D is the reason. The president and direct person in its formation.

B-Green design: This activity includes a group of works that seek to reduce environmental pollution through analyzing the life cycle of the product and knowing the environmental impact in all stages of its life in order to design, taking into account the environmental requirements during manufacturing processes or during the life cycle of the product. Green design includes the process of selecting the quality of materials. The green priority, with avoiding the use of hazardous materials, designing packaging processes, reducing waste, reducing the use of electrical energy and fuel in the production stage or when the product is used by the customer, and the optimal use of resources and energy. Green design also contributes to making the product recyclable and manufacturing in preparation for reuse in the future. Reducing the purchase of raw materials, as well as designing a product whose parts can be easily re-disassembled to reduce maintenance costs in the future or are easily biodegradable.

It is noted that the economic unit, through its activities (green R&D and green design), re-engineers the value of products, chooses the necessary mechanisms and technologies for production, and determines the quality and specifications of materials that are safe when used and do not consume a lot of energy and time during production to raise the efficiency of operations, preserve the environment, and reduce costs.

While maintaining the quality and specifications of the products that are comparable to or superior to the specifications of non-green products to meet the desires of customers and increase the sales of the Industrial enterprises due to the differentiation and quality of its products, green R&D activity and green design also provide solutions for recycling waste, whether resulting from operational processes or resulting from the use of the product in a way that It adds value to the Industrial enterprises and achieves sustainable development of resources.

The second stage (cleaner production stage):

The production stage is the primary source of gaseous, liquid and solid emissions. Chakravarty believes that 90% of toxic emissions are in the manufacturing process and result from increased energy use **(Chakravarty, 2014:294)**. To reduce pollution and produce environmentally friendly products and to conserve energy, we have turned to cleaner production, which is achieved By employing the four strategies (4Rs) in all stages of production (inputs - processes - outputs), where in the (inputs) stage one goes to buy environmentally friendly green materials through the Reduce strategy, and the use of materials is reduced by the amount needed, and the use of the reduction strategy leads to Reducing waste resulting from the use of surplus quantities, as well as reducing environmental pollution and the resulting disposal costs. In the (operations) stage, the reuse strategy is used to benefit from products and parts whose primary purpose of manufacture has ended but are still in condition. Good, they can be used again without making any improvements to them, which leads to reducing the use of resources and replacing them with reused materials, thus reducing costs and reducing waste and pollution. These reused materials can also be exploited in the production of other secondary products or introduced into the manufacture of another product, and this is done in the (Outputs) Benefiting from the recycling strategy to achieve financial savings by recollecting the outputs that are not used in reuse processes and converting them into raw materials and reducing product costs and waste disposal costs. It is also possible by following the Remanufacturing strategy. And benefit from materials that have been out of service due to

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the end of their lifespan or one of their parts was damaged through the following stages (cleaning - disassembly - reassembly - final inspection).

These four strategies (4Rs) when used in the three stages lead to reducing costs and reducing waste and energy consumed in production, thus producing a green, environmentally friendly product and achieving a reduction in production costs by taking advantage of these strategies.

The third stage (post-production)

At this stage, the Industrial enterprises works to add value to its products by following a series of activities, which leads to achieving a competitive advantage through customer satisfaction and raising its sales rate, thus increasing profitability, as follows: -

A- Green Marketing: -

This activity focuses on two main dimensions: making profit and taking into account the environment and social responsibility. In order to achieve these goals, green marketing activity seeks to transform customers' attitudes towards green brands by providing environmentally friendly products while taking into account reducing costs by packaging products in a way that reduces their damage and makes them more attractive. They are safer, which reduces the costs of spoilage and the costs of legal follow-ups, in addition to being safer products and less energy use. Green marketing also seeks to develop traditional products into green products through studying the market and the desires and trends of customers, which leads to increasing the volume of sales and the marketing share of the economic unit, which is reflected in Positively increasing profits and reducing costs.

B- Green distribution: -

This activity focuses on how the product reaches the consumer, and environmental aspects must be taken into account in the outlets selling the product. This activity includes using the least amount of packaging materials as well as the possibility of recycling them. Cooperation must also be done with buyers by improving functional behavior in interacting with customers. Customers, which contributes to increasing the unit's market share and reducing its costs by distributing large batches at once and in environmentally friendly ways. Distribution also plays a major role in reducing costs by providing a suitable environment during distribution, as well as the ability to protect it from environmental damage, rodents, and insects.

C- Green services: -

Paying attention to green services leads to increased customer satisfaction with the products, which contributes to increasing sales and increasing the company's profitability. At the same time, it represents feedback to the Industrial enterprises to know the obstacles that its products face.

D-Recycling: -

Recycling activity leads to reducing the consumption of raw materials by reusing recycled materials, as well as reducing waste and carbon emissions resulting from that waste. This activity also reduces the costs of purchasing materials due to the recycled materials being recovered, thus saving the costs of disposal. From an economic standpoint, it provides products from recycled materials at lower prices.

Through the use of the (GVC) and cleaner production, Industrial enterprises achieve distinction by producing a green, environmentally friendly product that is safe to use, does not consume a lot of energy, is of good quality, achieves customer satisfaction and cannot be easily imitated, especially while working to reduce production costs.

CONCLUSIONS AND RECOMMENDATIONS

First: Conclusions

1- Using (GVC) and cleaner production decreases emissions, waste, boosts work efficiency, conserves raw materials and energy, and increases the rates of utilization of those materials to reuse them multiple times, achieving optimal resource usage and thus lowering the costs of getting them.

2- Using the (GVC) helps the Industrial enterprises achieve financial savings and reduce damage costs and environmental fines through all activities, starting from R&D and ending with recycling products after use and extracting production waste.

3-The (GVC) and cleaner production are the most important strategies that support the competitive advantage of the Industrial enterprises through its interest in the environmental and social aspects and its reflection on the customer's perceived value, which qualifies it to grow in the competitive business environment.

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4-Cleaner production helps the Industrial enterprises achieve environmental requirements, avoid environmental fines and compensation resulting from non-compliance with environmental laws and regulations, improve production processes, and reduce the costs of treating emissions and waste.
5-The lack of sufficient information about cleaner production techniques and the (GVC) prevented their application by Industrial enterprises because the concept of technologies that take into account the environmental aspect was wrongly linked to high automation and large amounts of financing, which prevented them from being seriously studied as strategic options that could find radical solutions for Industrial firms.

Second: Recommendations

1- Encouraging Industrial enterprises to implement the (GVC) and cleaner production to support the environmental aspect by granting tax exemptions to Industrial enterprises that move towards applying these technologies.
2-Exploiting the resources of the Industrial enterprises more efficiently and reducing waste by adopting cleaner production techniques, which contributes to reducing the total cost of production and achieving the advantage of low cost for the products of the economic unit.
3- Industrial enterprises that seek to achieve sustainable competitive advantage must adopt the concept of the (GVC) because it is a safe and environmentally friendly strategic tool.

4- The conflict between the activities of the (GVC) must be eliminated in the economic unit. If it wants to achieve a high degree of consumer satisfaction, it must work to remove this conflict and create integration between its units.
5-Attention should be paid to green R&D, as it is the key to the success of the factory, and informing those in charge of it and all workers about cleaner production techniques, the (GVC), and how to analyze activities to eliminate activities that do not add value and keep activities that add value according to the customer's point of view and in a manner that meets environmental requirements.

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