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Encouraging Sustainability through the Implementation of Green Business Practices

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Abstract: This study explicitly examines the effects of energy efficiency, waste reduction, and environmental management systems in order to better understand the connection between greening practices and competitive advantage in the pharmaceutical business. The study asserts that implementing greening practices will positively impact a company's competitive advantage by increasing market share, customer loyalty, and innovation. It does this by drawing on a conceptual framework that positions greening practices as the independent variable and competitive advantage as the dependent variable. 426 Jordanian pharmaceutical company employees participated in the survey for this study, which provided information on their greening initiatives and competitive edge. The findings show a statistically significant positive association between the adoption of greening methods and competitive advantage, with businesses that adopted sustainable practices reporting increased market share, customer loyalty, and levels of innovation. A general competitive advantage in the market is a result of these events. The findings of this study have significant ramifications for pharmaceutical firms and other sectors looking to strengthen their market positions through environmentally friendly business practices. The findings highlight how important it is to adopt long-term sustainability measures and to appreciate the advantages of making investments in greening activities. Businesses can lessen their impact on the environment and gain a competitive edge by strengthening their market position by putting sustainability first and supporting environmentally friendly practice

Keywords: Greening practices, Competitive advantage.

JEL Codes: Q56, O33

1 Introduction

Organizations are increasingly embracing green business methods in the modern business sector in order to lessen their impact on the environment and encourage ethical behavior. In addition to promoting environmental and social responsibility, adopting sustainable practices can give businesses a competitive edge in the marketplace.

The purpose of this paper is to investigate the influence that environmentally responsible business practices have on a company's competitive advantage as well as the ways that environmentally friendly company procedures might contribute to the achievement of an organization. Recently, there has been a lot of interest directed toward the concept of sustainable business practices. This may be attributed to the increased concern that people have towards environmental and social concerns. The United Nations has recognized the importance of implementing environmentally responsible business practices in order to meet the Sustainable Development Goals (SDGs) stated in the 2030 Agenda for Sustainable Development. These goals may be broken down into 17 categories [1]. Investing money in renewable energy sources, reducing energy and water consumption, and reducing overall waste are all examples of green company strategies. Other examples include reducing the amount of trash produced and the amount of energy and water used.

By adopting environmentally responsible policies and procedures, companies have the opportunity to differentiate themselves in the marketplace and gain a strategic advantage over their rivals. According to the findings of recent studies, businesses that implement environmentally friendly policies and procedures often outperform their rivals over time, which ultimately leads to monetary success [2] For instance, a poll conducted by Nielsen found that 66 percent of customers are willing to pay more for environmentally friendly products; this demonstrates that environmental friendliness may be an important factor in consumer purchasing decisions [3].

Green business methods can also result in cost savings, improved operational efficiency, and improved brand recognition, all of which help provide a competitive edge [4]. Nonetheless, implementing green business strategies can

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also be difficult, especially for small and medium-sized businesses (SMEs), due to issues including a lack of information or competence and worries about the possible costs of sustainable operations [5].

Top management's dedication and a comprehensive approach to sustainability are required to overcome these obstacles [2]. For firms looking to gain a competitive edge and address social and environmental challenges, promoting sustainable practices through green business strategies is becoming more and more crucial. This essay will study how sustainable business practices can help businesses succeed while also examining the effect of green business tactics on competitive advantage.

2 Significance of study

For a number of reasons, the study on how green business practices affect the competitive advantage of Jordan's pharmaceutical industry is very important. First, the report talks about how sustainability is becoming more and more important in business, especially in the pharmaceutical sector, a key sector of the international economy. The pharmaceutical industry is anticipated to be a key contributor to achieving the sustainable development goals and putting sustainable business practices into place. Second, the research is important for Jordan's burgeoning and fiercely competitive pharmaceutical sector.

Jordan's pharmaceutical sector needs to implement sustainable, cutting-edge initiatives to maintain its competitiveness and strengthen its market position. The study's findings can help the pharmaceutical business in Jordan gain a competitive edge and prosper over the long term by illuminating the ways in which sustainable practices might do this. Third, Jordanian regulators and policymakers may benefit from the study's significant insights. Policymakers and regulators can create laws and policies that support the adoption of sustainable practices and advance environmental and social responsibility in the pharmaceutical sector by comprehending the effects of green business strategies on the competitive advantage of the company.

3 Literature review

The term "greening" describes the process of incorporating eco-friendly practices into a business's operations and endeavors. Reduced waste and pollution, resource conservation, and the use of renewable energy sources can all be part of this. The notion of "greening" is essential to the sustainability movement since it enables companies to lessen their negative effects on the environment while also generating profits. Some academics claim that being green can be viewed as a first step toward a more thorough approach to sustainability, one that also takes social and economic concerns into account [6];[7].

The term "greening" has been given a variety of interpretations in various works of literature. For example, Banerjee and Linstead [8] define "greening" as "the establishment of organization processes and frameworks that make the business responsible to its stakeholders for its impact on the environment."

According to research directed by the Global Business Council for Sustainable Development, ecologically responsible company practices have the potential to provide "triple bottom line" benefits, which include economic, environmental, and social advantages. For instance, if enterprises reduced the amount of energy they used overall, it would help them preserve money on their energy bills, reduce the amount of carbon dioxide that they put into the atmosphere, and contribute to the battle against climate change. Putting environmentally sensitive business practices into place can be difficult, particularly small business.[9]

One or more of these challenges might be a lack of financial resources, a lack of expertise or experience, or concerns over the potential costs connected with the implementation of environmentally responsible activities. [5] To overcome these challenges, businesses have access to a wide array of resources and support systems, which they may utilize. As an illustration, the World Business Council for Sustainable Development offers guidance and recommendations for businesses that want to implement sustainability methods, and the United Nations Global Compact offers a framework for businesses that want to integrate sustainability into their own operations.

[9];[1] Green business strategies may also help organizations differentiate themselves from their competition and attract clients that respect social responsibility. This can be accomplished through attracting customers to the company who value social responsibility. A survey conducted by Cone Communications found that 87 percent of customers stated they would purchase a product if they were aware that the company that made it supported a cause that was important to them. Using environmentally responsible business practices is becoming increasingly important for organizations that want to improve their long-term sustainability and address pressing environmental issues. There is a possibility that these tactics may have disadvantages, including a lack of knowledge or resources, but there is also a possibility that there may be positives, such as decreased expenditures, improved brand awareness, and the possibility of attracting

Businesses can successfully embrace and execute sustainable practices to help create a more sustainable future by utilizing tools and support systems, learning from best practices, and utilizing resources.

4 Dimension of green business practices

Green business practices are organizational strategies and procedures that lessen a company's negative environmental effects. These actions are intended to achieve sustainability and add value for the business and the environment. Environmental management, eco-innovation, green marketing, and green supply chain management are just a few of the aspects of green business practices that have been noted in the literature. The creation and implementation of policies and practices that lessen an organization's operations' negative effects on environmental management.

This may entail taking steps to cut back on your use of electricity, water, and waste. It has been discovered that environmental management techniques have a favorable impact on a company's financial performance and help it gain a competitive edge. Eco-innovation is the creation of innovative, ecologically friendly goods, services, and procedures. In order to do this, environmental factors must be incorporated into the innovation process.[11]

The emergence of new markets and the development of fresh sources of income for businesses are both facilitated by eco-innovation. Studies indicated that eco-innovation has a positive inspiration on the financial performance of a firm and helps it obtain a competitive edge over its peers. The development and marketing of products and services that are less harmful to the environment is referred to as "green marketing." The establishment of a favorable brand image and consumer loyalty can be fostered by green marketing approaches.[11]

Yet, greenwashing—where businesses make fictitious or overstated environmental claims in an effort to mislead customers—can also affect green marketing strategies. To have a positive effect on a company's reputation, green marketing strategies must be sincere and open; Environmental concerns must be incorporated into supply chain management in order to be considered green. This can involve choosing suppliers based on how well they treat the environment, using eco-friendly materials, and cutting back on emissions caused by transportation.[12]

By lowering costs, enhancing reputation, and increasing customer loyalty, green supply chain management strategies can help create a competitive edge. In conclusion, "green business practices" are organizational policies and procedures that lessen a company's negative environmental effects. Management of the environment, eco-innovation, green marketing, and management of the supply chain are some of the aspects of green business practices.[13]

The structure of greening as well as its many dimensions need to be taken into consideration before environmentally responsible corporate practices can be implemented. The greening framework offers a complete plan for companies to become more ecologically sustainable, consisting of a variety of dimensions and aspects that must be taken into consideration. Environmental management entails putting environmental policies into action and monitoring performance, whereas the design of products and processes focuses on reducing waste and pollution as much as possible through the utilization of renewable resources and the implementation of recycling initiatives. The goal of supply chain management is to include environmental concerns into a company's supply chain. This is accomplished through selecting environmentally friendly suppliers, cutting down on emissions connected to transportation, and limiting waste produced along the supply chain. Increasing knowledge and support for environmentally sustainable practices is a goal of stakeholder engagement, which entails incorporating consumers, employees, and local communities in the effort. Using energy-saving technology, optimizing building design, and improving energy management techniques are all efficient ways to improve energy efficiency and so lessen the negative impact that humans have on the environment. Recycling, composting, and other forms of trash reduction, as well as reducing garbage at its source, are three techniques that can assist reduce overall waste creation, save resources, and have a less negative impact on the environment. To engage in sustainable procurement means to make purchases of goods and services that are ecologically and socially responsible. Doing so may contribute to the reduction of environmental impacts and the promotion of more sustainable business practices. Over a product's entire lifespan, environmental impacts may be mitigated by designing products with sustainability in mind. This can be accomplished by utilizing environmentally friendly materials, cutting down on waste creation, and designing items for reuse and recycling. Environmental management systems serve as a framework for businesses, allowing them to manage their impacts on the environment in a methodical and comprehensive manner. This is accomplished by identifying environmental threats and opportunities, as well as developing strategies to improve environmental performance. Research conducted at universities and practical experience are combined to provide support for each of these components [7;13;14;15;16;17;18;19].

This study highlights the significance of establishing environmentally responsible corporate practices to lessen the influence on the environment and increase the likelihood of long-term sustainability. Analysis of a company's carbon footprint and evaluation of its life cycle are two important steps that should be taken by organizations. An evaluation of a product or service's life cycle evaluates the environmental effect of that product or service from its inception to its finish, whereas a carbon footprint study aids in the identification of areas for lowering greenhouse gas emissions. Businesses can become more environmentally friendly and gain a competitive advantage in the market by promoting sustainable supply chain practices, implementing waste reduction practices, reducing their energy consumption, utilizing renewable energy, adopting environmental management systems, and reducing the amount of waste they produce. The characteristics of environmentally friendly business activities are shown in figure 1.

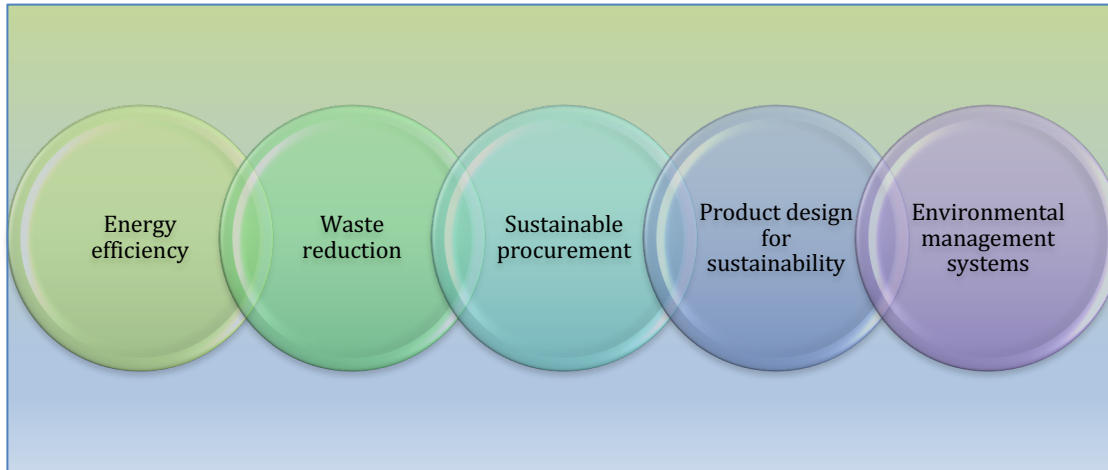


Fig. 1. Dimension of green business practices, figure created by the author (2023)

5 Competitive advantage

Competitive advantage refers to a company's capacity to outperform its rivals in the same industry, thereby achieving a superior market position and higher financial returns. Michael Porter, an authority on business strategy, identified two primary strategies for achieving a competitive advantage: cost leadership and differentiation. Cost leadership entails providing products or services at a lower price than competitors, whereas differentiation entails providing customers with distinctive and superior products or services [4]. A sustained competitive advantage is a long-term advantage that is difficult for rivals to imitate or overcome. It can be attained through elements such as superior technological capabilities, solid customer relationships, and efficient management practices [20]. Sustainable business practices, such as green business strategies, have been found to contribute to the development of competitive advantages for businesses. As outlined in Porter's model, gaining a competitive advantage may be accomplished by developing a one-of-a-kind value proposition that sets a firm apart from its contemporaries in its industry. This can be done through distinctiveness, cost leadership, or a combination of the two approaches. Sustainable practices have the potential to serve as a point of difference, which may help in the establishment of a competitive advantage [21]. There have been a lot of research done on the relationship between environmentally friendly business practices and having an advantage over the competition. In a manner analogous to this, [21] observed that green innovation positively improved the competitive advantage of Chinese companies. Mishra and Bisht [22] found that in the pharmaceutical industry, sustainable practices such as green business strategies may lead to the establishment of competitive advantages for telecom businesses. According to the findings of the study, sustainable business practices may contribute to a competitive advantage in a variety of ways, including the reduction of costs, improvement of reputation and brand image, increase in customer loyalty, and enhancement of brand image. According to the findings from the study, environmentally responsible business practices, such as green business strategies, could have a favorable influence on the capacity of a firm to successfully compete in its market. These benefits can be accomplished by either cost leadership or differentiation, or through a mix of the two strategies.

6 Competitive advantage Measurement

The various aspects that go into determining one's level of competitive advantage is assessing the ability of a business to generate and keep a steady stream of earnings over a prolonged period of time. The list that follows consists of a few of the most common methods that are used to evaluate the degree to which a firm has an edge in its market:

- The percentage of a company's total sales that are generated by a particular firm is referred as the company in question's market share. This is one definition of market share. It's conceivable that this proportion will change

based on the industry. It is feasible to establish the percentage of the market which a company has in a particular industry by taking the firm's sales and dividing that number by the overall sales of the industry. It is normal practice to consider a firm to have a competitive advantage if it holds a greater share of the market than its other competitors in the same industry. This is because holding a larger market share results in more sales. This is due to the fact that more sales arise from having a higher market share. This is due to the fact that holding a bigger share of the market may result in economies of scale, which may, in turn, result in lower costs and more negotiating power with vendors [4].

- Loyalty from the clientele: It's possible that having a competitive edge lies on having a loyal client base. satisfaction surveys, repurchase intentions, and advocacy for the brand are some ways in which customer loyalty may be quantified. Recurrent business is a key indicator of client loyalty because it shows that consumers are content with a business's goods or services and are eager to continue purchasing from that firm. In other words, repeat business indicates that consumers are loyal to a company. In addition to being a measure for evaluating customer loyalty, brand advocacy, often known as the extent to which people suggest a brand to others, may be a possible source of a competitive edge [23].
- Innovation: Innovation can also provide a competitive advantage. Companies that are able to create new products or services, enhance existing products or services, or implement innovative business models may be able to capture market share from their competitors. Innovation can be measured by the number of patents a company holds, the amount of R&D spending, or the proportion of new-product-driven revenue [24].

Figure 2 illustrates the contributors to competitive advantage. Included in these factors are market share, customer loyalty, and innovation.

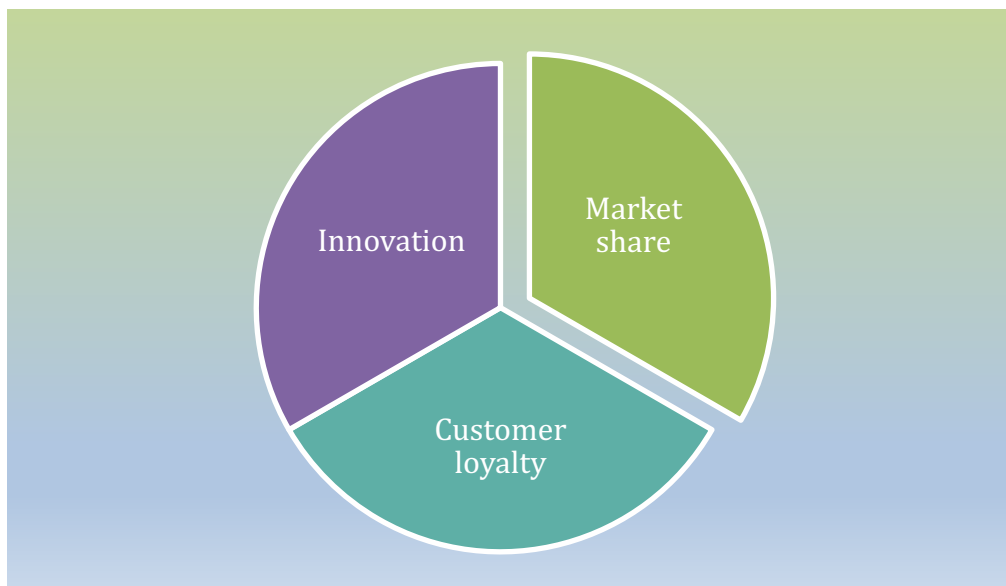


Fig. 2. Competitive advantage factors, the Figure created by author (2023)

7 Hypotheses of the study:

The purpose of this study is to investigate the influence of greening practices on a company's competitive advantage, market share, consumer loyalty, and innovation. In today's business environment, the implementation of greening practices, such as energy efficiency, waste reduction, and environmental management systems, has become increasingly crucial due to growing concerns regarding sustainability and environmental issues. Although it has been demonstrated that the adoption of these practices has positive environmental effects, their impact on a company's competitive advantage and other business outcomes remains a matter of debate.

H1: The implementation of greening practices has a positive influence on a company's competitive advantage.

Choi and Lee [25] discovered that green management practices, such as energy efficiency and waste reduction, positively impacted a company's financial performance and competitive advantage in South Korea. Similarly, a study by Jayaraman and Collier [26] found that businesses with robust environmental management systems had a greater chance of attaining a sustained competitive advantage in the Australian context. In a different study, Prajogo and Olhager [27] discovered that businesses with outstanding environmental management procedures had higher operating performance

and were stronger able to respond to changes in consumer demands, which increased the companies' competitive advantage in the industrial industry of Sweden.

H1.1: The implementation of greening has a positive influence on market share.

Companies who adopted more energy-efficient corporate practices was able to increase their market share. This was seen in the setting of a great variety of businesses. A similar finding was found by Ameer and Othman [28], who discovered that companies that included systems for environmental management witnessed an increase in their market share. In a separate study, Kim and Lyon [29] found that the incorporation of voluntary basis implemented green activities, such as the ISO 14001 environmental management system, led to a rise in the market value of a firm. Specifically, they found that the value of a firm enhanced by a total of 5%. In conclusion, the literature indicates that the implementation of greening practices can positively impact a company's market share. Companies that implement energy efficiency, waste reduction, and environmental management systems may gain a competitive advantage over their rivals, resulting in a larger market share. However, the relationship between greening practices and a company's financial performance may be industry- and company-specific.

H1.2: The implementation of greening has a positive influence on customer loyalty.

Customers were more loyal to businesses that engaged in socially responsible practices, according to Bhattacharya and Sen [30]. Likewise, Lichtenstein et al. [31] discovered that consumers were more likely to pay a premium for environmentally friendly products. These studies indicate that corporate sustainability can provide a competitive advantage to businesses. Several studies have also investigated the connection between greening practices and customer loyalty. In accordance with the findings of a study that was carried out by Chen and Chang [32], customers were more inclined to continue their patronage of companies that were committed to being ecologically responsible. In addition, the research found that businesses who told their customers about their efforts to reduce their environmental impact were able to boost the number of devoted customers they had. Kim and Park [29] found in a separate study that the adoption of ecologically responsible practices had a good influence on customer satisfaction, which enhanced customer loyalty. This was shown to be the case when environmentally responsible practices were adopted by a company. According to the findings of the study, socially responsible businesses have a higher association between their environmentally conscious business operations and the loyalty of their customers. Nonetheless, a lot of research have come to the conclusion that there is no connection between eco-friendly business operations and devoted customers [33;34]. According to the findings of these research, the influence of green business practices on the loyalty of customers may be contingent on the particular green business practices utilized by the firm and the sector.

In conclusion, the literature indicates that the implementation of greening practices can have a positive impact on consumer loyalty. Customers are more likely to remain loyal to businesses that engage in socially responsible practices and effectively communicate their green initiatives. Companies that employ systems for energy efficiency, waste reduction, and environmental management may gain a competitive advantage over their rivals, resulting in increased customer loyalty. However, the relationship between greening practices and customer loyalty may be contingent on the specific practices adopted by the organization and the industry.

H1.3: The implementation of greening has a positive influence on an innovation.

According to the findings of Gallego-Ivarez [18], businesses that have environmental management systems in place had a greater propensity to engage in eco-innovation. In a similar vein, Melissen and Nijhof [35] discovered that businesses that implemented environmentally friendly policies had a greater propensity to engage in social innovation. Many studies have been conducted to investigate, among other topics, the connection that exists between environmentally friendly business practices and creative thinking. According to the findings of a study that was carried out by Hu and Yuan [34], the implementation of environmentally friendly supply chain management methods had a beneficial effect on innovative practices carried out by Chinese businesses. The research also indicated that the degree to which an organization's internal innovation potential played a role in determining the impact of green supply chain management on innovation was a significant moderating factor. In a separate piece of research, Zhu and Sarkis [36] discovered that the implementation of environmentally responsible management practices resulted in an increase in the amount of innovative thinking in US manufacturing companies. In addition, the study came to the conclusion that the impact of environmental management on innovation was mediated by the organizational learning capabilities of the company. Yet, a number of studies have come to the conclusion that there is no significant connection between environmentally friendly behaviors and innovative practices [37; 21]. According to the findings of these studies, the effect that green practices have on innovation may be contingent on the particular practices that are implemented by the company as well as the industry. In summing up, the research that has been conducted indicates that the application of techniques that are environmentally friendly has the potential to positively affect innovation. Businesses that implement environmental management systems, waste reduction strategies, and energy efficiency improvements may have a greater propensity to engage in eco-innovation and social innovation. There is a possibility that innovative methods will benefit from the

implementation of environmentally responsible supply chain management and environmental management practices. However, the relationship between greening practices and innovation may be contingent on the specific methods employed by the company and the industry, as well as the firm's internal innovation capability and organizational learning capability.

8 Conceptual framework

A study's conceptual framework will frequently provide an outline of the primary variables and interactions that are being investigated. The following conceptual framework can be useful to consider in relation to greening and competitive advantage: Greening, which incorporates factors such as energy efficiency, waste reduction, and environmental management systems [6;15;16;19]; this is the independent variable. And the variable that will be dependent on this is competitive advantage, which can be assessed through measures such as market share, customer loyalty, and innovation [29;32;35]

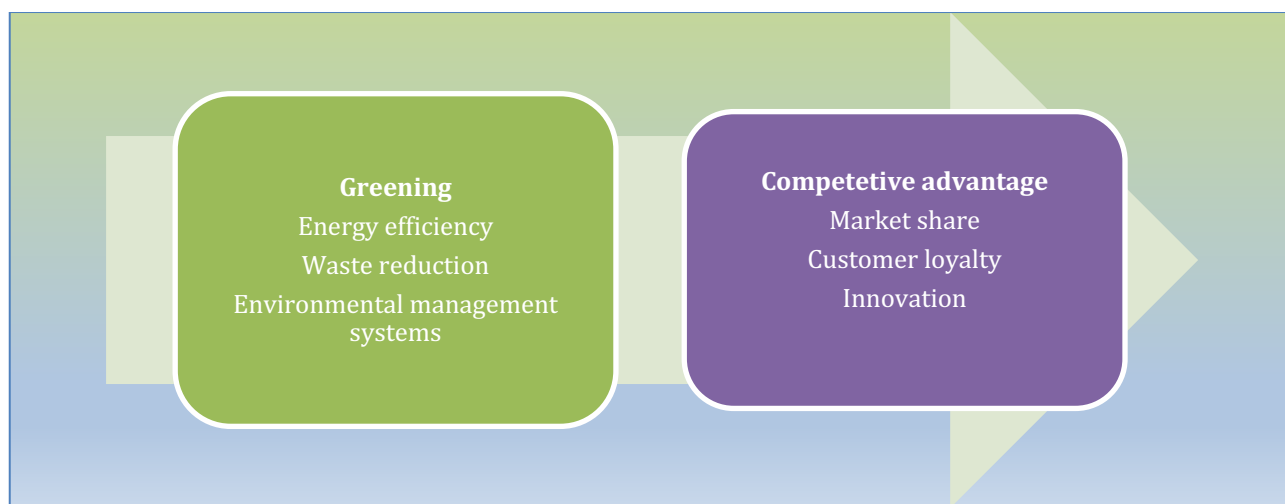


Fig. 3. Module of the study, Figure created by the author (2023)

9 Research Design

A quantitative research design is going to be used for the investigation. It is possible to investigate the links between factors, greening practices, and competitive advantage using this design.

Data Collection

The data will be obtained through the use of a survey questionnaire that will be given to a representative sample of the pharmaceutical companies that are currently functioning in Jordan. According to the Jordanian Association of Pharmaceutical Manufacturers [38], there are currently 27 companies in this sector that produce a diverse range of goods, such as branded and generic drugs, over-the-counter medications, and medical devices. These goods are exported to a variety of countries. The pharmaceutical industry in Jordan is well-known for its stringent regulatory framework. In recent years, the industry has been experiencing consistent growth as a result of increased investment in research and development as well as an emphasis on the production of high-quality products for sale on domestic as well as international markets. The survey had been composed of questions with no space for open-ended responses. These questions were developed with the intention of measuring specific aspects of interest, including market share, customer loyalty, innovation, energy efficiency, and waste reduction.

Sampling Method

The pharmaceutical industry in Jordan includes all of the companies that are of interest to the researcher. Using a method known as stratified random sampling, the sample was taken from this population. The population is then stratified into categories according to the size of the companies, and a sample is chosen at random from each category, this ensures that the sample is representative of the population in terms of company size, as each stratum is represented in the sample. In other words, this ensures that the sample is typical of the population.

Data Analysis

Analyses of both descriptive and inferential statistics were performed on the data that was collected. The data are summarized using descriptive statistics, the hypotheses were put to the test with the use of inferential statistics, and the

significance of the associations between the variables was determined as a result. For the purpose of the analysis, the statistical program SPSS was utilized.

Demographic analysis:

Table 1: Descriptive sample of the demographic variables of the study.

NO.	Variables	Categorization	Frequency	Percent%
1	Work experience	Less than 2 years	70	16.4
		2 to 5 years	136	31.9
		More than 5 years	220	51.6
	Total		426	100
2	Educational level	Bs	277	65
		Master	23	5.4
		PhD	71	16.7
		others	55	12.9
	Total		426	100
3	Managerial level	Senior	197	46.2
		Middle managerial level	116	27.2
		top managerial level	22	5.2
		Other	91	21.4
	Total		426	100

Table 1 Descriptive sample of the demographic variables, Prepared by author of the study (2023)

Based on Table (1) the study offers demographic data on three different variables, including job experience, educational level, and managerial level. Work experience: More than half of the respondents (51.6%), followed by 31.9% who said they had between 2 and 5 years of experience, and just 16.4% who said they had less than 2 years of experience. Based on this distribution, it appears that the sample has a rather high amount of job experience. Educational level: The biggest number of respondents (65%) reported having a Bachelor's degree, followed by 16.7% of respondents who had a PhD, 12.9% of respondents who had other credentials, and just 5.4% of respondents who had a Master's degree. Managerial level: Almost half of the respondents (46.2%) reported holding a senior-level managerial role, while 27.2% reported holding a middle-level managerial post. Just 5.2% of respondents claimed holding a top-level administrative role, while 21.4% said they were employed in various capacities. This distribution shows that the sample is largely constituted of medium and senior-level managers, with a relatively small fraction of top-level managers being included in the sample. Overall, the demographic variables suggest that the sample is relatively experienced in the workforce, with a significant proportion of middle and senior-level managers, and a relatively low proportion of highly educated respondents. This discovery is in line with the fact that there are a lot of people in the sample, which also means it's credible. Researchers may find that these findings are helpful when assessing the results of the study and establishing the extent to which their findings may be applied to a variety of different populations.

Validity and Reliability:

Validation:

Table 2: The results of the exploratory factor analysis of the study tool:

NO.	Item	Loadings (Independent variable: greening practices)	Loadings (Dependent variable: competitive advantage)
1	We have implemented greening practices in our company (e.g., energy efficiency, waste reduction, environmental management systems) to gain a competitive advantage in the marketplace	0.696	
2	Our greening practices have helped us to reduce costs and increase profits, giving us a competitive advantage over other companies in our industry	0.752	
3	Our company's greening practices have improved our reputation and image, giving us a competitive advantage over	0.648	

	companies that are less environmentally responsible		
4	Our company's greening practices have helped us to comply with regulations and standards related to sustainability, giving us a competitive advantage over companies that are non-compliant	0.584	
5	Our company's greening practices have helped us to attract and retain talented employees who value sustainability, giving us a competitive advantage in the labor market	0.511	
6	Our company's greening practices have helped us to reduce our carbon footprint, which has become an increasingly important consideration for customers and investors, giving us a competitive advantage in terms of brand perception and investment opportunities	0.807	
7	Our company's greening practices have helped us to establish partnerships with other companies that share our sustainability values, giving us a competitive advantage through collaboration and shared resources	0.714	
KMO		0.765	
Bartlett's Test of Sphericity – Chi-Square		930.291	
Df		21	
Eigen Value		2.175	
Sig.		0.00**	
1	Our greening practices have helped us to increase our market share by attracting more customers who value sustainability		0.81
2	Our greening practices have helped us to differentiate ourselves from our competitors and gain a larger market share as a result		0.498
3	Our greening practices have helped us to build stronger relationships with our customers, resulting in higher levels of customer loyalty.		0.67
4	Our greening practices have helped us to meet our customers' expectations for sustainability and as a result, they are more likely to remain loyal to our brand		0.827
5	Our greening practices have encouraged innovation within our company by driving us to find new ways to be more sustainable and efficient		0.705
6	Our greening practices have led to the development of new products and services that have given us a competitive advantage in the marketplace		0.663

KMO	0.764
Bartlett's Test of Sphericity – Chi-Square	572.343
Df	15
Eigen Value	2.633
Sig.	0.00**

Table 2: The results of the exploratory factor analysis of the study tool, Prepared by author of the study (2023).

Table 2 displays the results of an exploratory factor analysis that was performed on the research instrument. This analysis was done with the intention of measuring the relationship between competitive advantage and greening practices. All of the values for the Eigen Value were found to be greater than 1, which indicates that the factors did have a significant influence on the variable that was being studied. In addition, all of the KMO values were greater than 0.5, and the results of the Bartlett's test of sphericity were statistically significant at the 0.05 level of significance. This suggests that the sample size was reasonable, and that the variables were of sufficient quality for factor analysis. In addition, every item had factor loadings that were higher than 0.4, which is an indication of the high degree of construct validity that the research instrument had. According to the findings, a competitive advantage in the market can be favorably related with the greening measures that were applied by the companies. These practices assisted businesses in lowering their expenses and raising their profits, enhancing their reputation and image, adhering to regulations, attracting and retaining talented employees, lowering their carbon footprint, forming partnerships with other businesses, and stimulating innovation. In general, the results of the exploratory factor analysis lend support to the validity of the research instrument, as well as the relationship between competitive advantage and environmentally friendly behaviors.

Reliability:

Reliability of Questionnaire Dimensions:

Table 3: Reliability Test (Cronbach's Alpha) for all Variables.

NO.	Dimensions	NO.	Cronbach's Alpha (Alpha Value (α))
1	Independent Variable (greening practices)	7	0.780
2	Dependent Variable (competitive advantage)	6	0.714
	Overall	13	0.843

Table 3 : Reliability Test (Cronbach's Alpha) for all Variables. Prepared by author (2023).

In Table 3, the results of the reliability test using Cronbach's Alpha are presented for both the independent variable (greening practices), as well as the dependent variable (competitive advantage). The overall Cronbach's Alpha for all of the variables came in at 0.843, which shows that the research instrument has a good level of reliability. The values of the reliability coefficients for both the independent and dependent variables, which were 0.780 and 0.714 respectively, were both high. According to Pallant [39], these numbers are higher above the permissible threshold of 0.70. Because of this, the tool for the study can be utilized effectively in working toward the goals of the study. In conclusion, the findings of the reliability test offer evidence of the high dependability of the research tool, demonstrating that it is a valid and reliable instrument for measuring the relationship between environmentally responsible activities and a competitive advantage.

10 The Results

Descriptive analysis of study variables:

The items of the questionnaire were graded according to the five scales as follows:

Grade	1	2	3	4	5
Scale	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Cronbach's Alpha is used to display the results of the reliability test in Table 3, which is for bot. On the basis of the scale used to grade the items in the questionnaire, the following is a classification of the relative importance of the items: It is determined that an item has a low relative relevance if it has a score that falls between 1 and 2.33. Things are considered to have a medium relative relevance if they have a score that falls between 2.34 and 3.67. Things that receive a score between 3.68 and 5 are considered to have a high relative relevance. This classification is predicated on the presumption that higher scores reflect higher degrees of agreement with the statement or item, and hence, higher relative relevance.

Table 4: Descriptive Statistics greening practices.

NO	Items	Mean	Std.	t- value Calculate	Sig.	Rank	Importance level
1	We have implemented greening practices in our company (e.g., energy efficiency, waste reduction, environmental management systems) to gain a competitive advantage in the marketplace	4.19	0.69	35.29	0.00**	2	High
2	Our greening practices have helped us to reduce costs and increase profits, giving us a competitive advantage over other companies in our industry	4.06	0.76	28.50	0.00**	3	High
3	Our company's greening practices have improved our reputation and image, giving us a competitive advantage over companies that are less environmentally responsible	3.94	1.07	18.14	0.00**	6	High
4	Our company's greening practices have helped us to comply with regulations and standards related to sustainability, giving us a competitive advantage over companies that are non-compliant	3.91	0.79	23.91	0.00**	7	High
5	Our company's greening practices have helped us to attract and retain talented employees who value sustainability, giving us a competitive advantage in the labor market	4.03	0.97	21.88	0.00**	4	High
6	Our company's greening practices have helped us to reduce our carbon footprint, which has become an increasingly important consideration for customers and investors, giving us a competitive advantage in terms of brand perception and investment opportunities	4.22	0.66	37.92	0.00**	1	High
7	Our company's greening practices have helped us to establish partnerships with other companies that share our sustainability values, giving us a competitive advantage through collaboration and shared resources	4.00	0.69	30.08	0.00**	5	High
Overall		4.05	0.54	High			

Table 4 Descriptive Statistics greening practices prepared by author of the study (2023).

According to the findings presented in Table (4), all of the questions pertaining to greening procedures had high mean scores, which ranged from 3.91 to 4.22, suggesting that the respondents largely concurred with the assertions. A low amount of variability in the responses was shown by the standard deviations, which were quite low and ranged from 0.66 to 1.07 respectively. All of the t-values were statistically significant at the level of $\alpha = 0.05$, meaning that the means were significantly different from the hypothetical value of 3, which reflects a neutral reaction. This was indicated by the fact that all of the t-values were statistically significant. The relevance ratings of the items were all high, with values ranging from 1 to 7, indicating that the respondents deemed every item to be important in some capacity. The overall mean score for all questions was 4.05, which indicates that the vast majority of respondents concurred that environmentally responsible business practices are essential to achieving a competitive edge. In a nutshell, the findings indicate that the respondents thought that implementing environmentally friendly business practices was important for achieving a competitive advantage, and that the research instrument that was used to measure the reliability and validity of this relationship was accurate.

Competitive advantage.

Table 5: Descriptive Statistics Competitive advantage

NO	Items	Mean	Std.	t- value Calculate	Sig.	Rank	Importance level
1	Our greening practices have helped us to increase our market share by attracting more customers who value sustainability	4.00	0.77	26.57	0.00**	1	High
2	Our greening practices have helped us to differentiate ourselves from our competitors and gain a larger market share as a result	3.97	0.99	20.16	0.00**	2	High
Overall (company's market share)		3.98	0.74	High			
1	Our greening practices have helped us to build stronger relationships with our customers, resulting in higher levels of customer loyalty.	3.86	0.80	22.04	0.00**	2	High
2	Our greening practices have helped us to meet our customers' expectations for sustainability and as a result, they are more likely to remain loyal to our brand	3.92	0.81	23.35	0.00**	1	High
Overall (company's customer loyalty)		3.89	0.69	High			
1	Our greening practices have encouraged innovation within our company by driving us to find new ways to be more sustainable and efficient	4.03	0.75	28.38	0.00**	2	High
2	Our greening practices have led to the development of new products and services that have given us a competitive advantage in the marketplace	4.08	0.67	33.22	0.00**	1	High
Overall (innovation)		4.06	0.55	High			
Overall (Competitive advantage)		3.98	0.52	High			

Table 5 Descriptive Statistics Competitive advantage, prepared by author of the study (2023).

It is possible to draw the following conclusion from the descriptive statistics that are shown in Table (5): the greening practices that the firm has implemented have had a major impact on the company's market share, customer loyalty, innovation, and competitive advantage. The company's greening procedures have helped it to attract more customers who value sustainability and separate itself from competitors, according to the mean values of market share, which indicates that the company has been successful in increasing its market share. This shows that customers have a favorable impression of the company's efforts to promote sustainability, which, in turn, can lead to higher revenue and profitability for the business. According to the company's greening practices, the company has been able to create closer ties with its consumers, which has resulted in higher levels of customer loyalty. This is indicated by the mean values of customer loyalty. It is essential for a company's long-term success to meet the expectations of its customers about sustainability, as this will likely result in increased customer loyalty. The company's greening policies have, as indicated by the mean values of innovation, promoted innovation within the company, which has resulted in the development of new products and services that have provided the company with a competitive advantage in the marketplace. It appears from this that sustainability can be a driver of innovation and lead to new opportunities for businesses. According to the descriptive statistics, the greening practices of the company are highly valued by customers and have a substantial impact on the performance of the company as a whole. These findings highlight the importance of sustainability as a strategic tool for businesses, one that may drive growth and provide them an advantage over their competitors.

The results of testing hypotheses:

Table 6: H1: The implementation of greening has a positive influence on competitive advantage.

Direction		β	t	Sig.	R	R ²	Adjusted R ²	
greening practices	----->	competitive advantage	0.64	17.13	0.00**	0.639	0.409	0.408

Table 6 H1, prepared by author of the study (2023).

The findings shown in Table 6 show that there is a considerable positive association between environmentally responsible activities and a company's competitive advantage. The effect value, or, was calculated to be 0.64, which indicates that there is an expected rise in competitive advantage of 0.64 units for every one unit increase in greening practices. The result of the t-test showed that the value was statistically significant at the level of statistical significance (= 0.05), which indicates that the effect value was not the result of random chance. The correlation coefficient, often known as R, was 0.639, which indicates that there is a positive link, albeit a moderate one, between the two variables. According to the value of modified R2, the proportion of unexplained variance in competitive advantage that may be attributed to greening techniques was 40.8%. These findings provide support for Hypothesis 1, which suggests that the deployment of greening measures, such as energy efficiency, waste reduction, and environmental management systems, has a beneficial influence on a company's ability to maintain its position as a market leader. As consumers become more environmentally conscious, they place a higher value on companies that are environmentally conscious and make sustainability a priority while also implementing environmentally friendly business practices. This can provide an opportunity for businesses to gain a competitive advantage over their rivals.

Table 7: H1.1: The implementation of greening has a positive influence on market share.

Direction		β	t	Sig.	R	R ²	Adjusted R ²	
greening practices	----->	company's market share	0.62	16.15	0.00**	0.617	0.381	0.379

Table 7 H1.1, prepared by author of the study (2023).

The results of the tests conducted on hypothesis H1.1 are presented in table 7. This hypothesis argues that the implementation of greening techniques, such as energy efficiency, waste reduction, and environmental management systems, has a positive influence on the market share of a company. The direction of the link is from a company's market share to its environmentally friendly business practices. The value of the coefficient for the association between green business practices and a company's market share is calculated to be 0.62. It can be deduced from the fact that the value of the t-test was found to be statistically significant at the level of statistical significance (= 0.05), that the effect value is significant. The value of the correlation was 0.617, and 37.9% of the company's market share variance could be explained by greening activities. On the basis of these findings, the conclusion that can be drawn is that the implementation of greening techniques, such as energy efficiency, waste reduction, and environmental management systems, has a beneficial effect on a company's market share can be supported.

Table 8: H1.2: The implementation of greening has a positive influence on customer loyalty.

Direction		B	t	Sig.	R	R ²	Adjusted R ²
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greening practices	----->	company's customer loyalty	0.36	8.04	0.00**	0.364	0.132	0.130
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Table 8 Test results H1.2, prepared by author of the study. (2023).

With a beta coefficient of 0.36 and a t-value of 8.04, Table 8 demonstrates that the effect of implementing greening practices on a company's customer loyalty was found to be statistically significant at the level of significance ($\alpha = 0.05$). These practices include energy efficiency, waste reduction, and environmental management systems. The correlation value was 0.364, and 13% of the variance in customer loyalty was explained by the company's use of environmentally friendly business practices. Based on these findings, it appears that the application of greening methods has a beneficial influence on the loyalty of a company's customers.

Table 9: Test results H1.3: The implementation of greening practices has a positive influence on innovation.

Direction			B	t	Sig.	R	R ²	Adjusted R ²
greening practices	----->	Innovation	0.51	12.28	0.00**	0.512	0.262	0.261

Table 9 H1.3, Prepared by author of the study. (2023)

According to the findings presented in Table 9, it was discovered that the effect of greening techniques on innovation was considerable, with a t-value of 12.28 and a coefficient of 0.51, both of which were statistically significant at the level of $\alpha = 0.05$. The result of the correlation was 0.512, which indicates that there is a moderately good association between the application of environmentally friendly techniques and innovation. 26.1% of the variance in innovation was explained by greening approaches, which is a significant percentage. Consequently, it is possible to draw the conclusion that the implementation of greening techniques in an organization, such as energy efficiency, waste reduction, and environmental management systems, has a beneficial influence on creativity inside that organization.

11 Discussion

The key determinants of greening and competitive advantage, as well as the linkages between the two that are being investigated, are outlined in this study's conceptual framework. According to previous studies [6;15;16;19]; the independent variable known as "greening" includes aspects such as energy efficiency, waste reduction, and environmental management systems. This assertion is supported by the fact that "greening" The independent variable, competitive advantage, has been measured using a variety of indicators, including market share, customer loyalty, and innovation, amongst others [29;32;35]. The four hypotheses H1, H1.1, H1.2, and H1.3 investigate the connections between going green and the various factors that contribute to a company's overall competitive advantage.

The argument made in Hypothesis 1 is that the practice of going green has a favorable impact on the competitive advantage of a company. This notion is supported by earlier research that has shown that implementing environmentally friendly business practices may boost an organization's overall performance as well as its competitiveness in the market. Because becoming green may cut a company's operational expenditures, improve their reputation, and bring in more consumers, businesses have the opportunity to increase their competitive edge by implementing environmentally friendly practices.

As per the first hypothesis, which is denoted by the label H1.1, the adopting of environmentally responsible practices inside a company has a favorable impact on the proportion of the market that is held by that company. The evidence that was presented in the prior section lends credence to this point of view. This theory has been validated by prior studies that shown how the introduction of policies that are friendlier to the environment could result in a rise in share of the market. Companies have the potential to distinguish themselves from their rivals and gain the attention of customers that are keen on environment protection, that will eventually lead to a rise in market share if they take advantage of this opportunity. This objective can be met by lessening the detrimental effects they have on the surrounding environment.

In the context of Hypothesis H1.2, adopting adoption of environmentally conscious company processes is regarded as having a beneficial impact on the loyalty of a firm's customer. This assertion is framed as a supposition at this point in the discussion. This hypothesis is supported by findings from previous research which revealed that the adoption of environmentally friendly policies may result in an increase in the degree to which consumers are loyal to a brand. The improvement of a company's reputation, the forging of stronger ties with consumers, and the creation of a sense of shared values are all factors that can eventually lead to an increase in customer loyalty. Businesses that adopt greening methods can achieve all of these results.

It is hypothesized in Hypothesis H1.3 that the application of environmentally friendly techniques has a favorable impact

on creativity. This hypothesis is confirmed by past studies that shown how the implementation of environmentally friendly policies might result in an increase in innovative activities. Companies can enhance their innovation by developing new products and services, embracing new technology, and exploring new market opportunities when they use green business practices.

The conceptual framework and hypotheses suggested in the study have been shown to be supported by the research outcomes. Tables 6, 7, 8, and 9 all show that there is a statistically significant positive association between the application of greening methods and several components of a company's competitive advantage. These aspects include market share, customer loyalty, and innovation, amongst others.

To be more specific, the findings shown in Table 6 indicate that the adoption of environmentally friendly business practices has a sizeable and favorable impact on the market share of a given organization, lending credence to Hypothesis 1. As shown in Table 7, the adoption of environmentally friendly business practices has a large and beneficial impact on the total competitive advantage of a company, lending credence to Hypothesis 1. The results of the implementation are presented in Table 8. The conceptual framework and hypotheses suggested in the study have been shown to be supported by the research outcomes. Tables 6, 7, 8, and 9 all show that there is a statistically significant positive association between the application of greening methods and several components of a company's competitive advantage. These aspects include market share, customer loyalty, and innovation, amongst others. To be more specific, the findings shown in Table 6 indicate that the adoption of environmentally responsible business practices has a sizeable and favorable impact on the market share of a given organization, providing support for Hypothesis 1. As shown in Table 7, the application of greening practices has a considerable beneficial effect on the total competitive advantage of a company, which provides support for Hypothesis 1. As shown in Table 8, the application of greening methods has a considerable beneficial effect on the amount of customer loyalty a company enjoys, lending support to Hypothesis 1. In addition, the results in Table 9 demonstrate that the deployment of greening methods has a considerable beneficial influence on creativity, providing support for Hypothesis 1. According to the findings of the study as a whole, the implementation of green business practices such as energy efficiency, waste reduction, and environmental management systems can have a positive impact on a company's competitive advantage in a variety of ways. Some of these ways include increasing market share, increasing customer loyalty, and increasing innovation. This provides support for the conceptual framework and assumptions that were given in the study, and it highlights the relevance of environmental sustainability practices in gaining and retaining a competitive advantage in today's landscape for doing business.

The findings of the study are consistent with the conceptual framework, which postulates that greening is an independent variable that has a positive influence on competitive advantage, which is the dependent variable. The findings of the study are consistent with the conceptual framework. According to the findings of the study, businesses that adopt environmentally friendly policies have a greater chance of gaining competitive benefits such as increased market share, devoted client base, and innovative capabilities. The findings of the study have significant repercussions for executives and those who formulate policies. Managers that are interested in generating competitive advantages may wish to explore introducing greening practices as a strategy in order to accomplish their goals. It is possible that policymakers that are interested in encouraging sustainable business practices may seek to offer incentives to businesses in order to encourage them to undertake greening methods. The findings of the study, taken as a whole, offer vital new insights into the relationship between environmentally responsible activities and a competitive advantage. It emphasizes the significance of sustainability for the achievement of long-term business success and proposes that businesses who place a priority on sustainability may be in a better position to compete in the market environment.

In a nutshell, the findings of the study indicate that environmentally responsible business practices contribute favorably to the competitive advantage enjoyed by a pharmaceutical company. The findings indicate that businesses that make investments in environmentally friendly business practices can boost their market share, customer loyalty, and innovation, which will ultimately lead to a stronger competitive position. However, the limitations of the study should be taken into consideration, and future research should try to solve these constraints as well as further investigate the relationship between sustainability and competitive advantage in other industries and areas. In general, this study underlines the significance of environmentally responsible business practices and the possible benefits that they can provide to corporations that are looking to better their position in the market relative to other similar businesses.

12 Conclusion

The investigation of the link between environmentally friendly business practices and a competitive advantage in the pharmaceutical industry was the objective of this study. The conclusion of the study is that green business practices, such as energy efficiency, waste reduction, and environmental management systems, have a positive impact on a

company's competitive advantage. This conclusion is based on the findings of a survey that had 426 respondents from the pharmaceutical industry take part in it. The findings of the study lend credence to the hypothesis that environmentally responsible business practices have a positive impact on market share, customer loyalty, and innovative capacity. According to the findings, businesses that have implemented greening practices have reported higher levels of market share, customer loyalty, and innovation, all of which have ultimately contributed to their overall competitive advantage in the marketplace. The findings of this study have important ramifications for businesses in the pharmaceutical industry and other industries that are looking to improve their competitive position through the implementation of environmentally friendly practices in their operations. Companies can not only lessen their impact on the environment but also improve their market position by growing their market share, maintaining loyal customers, and developing innovative products and services if they adopt environmentally friendly business practices and put them into practice. These findings imply that businesses ought to take a more long-term approach to sustainability and acknowledge the benefits that come with investing in environmentally friendly practices. However, it is essential to keep in mind that this study does have some restrictions in place. Because the sample size was restricted to pharmaceutical companies operating within the pharmaceutical industry, the results may not be generalizable to other industries or geographical regions. In addition, the study relied on data that was self-reported by the companies, which means that it may have been subject to bias. In subsequent studies, it would be beneficial to try to address these limitations by using a larger and more diverse sample, as well as by drawing on additional data sources and methods of analysis. In summing up, the findings of this research offer important new perspectives on the connection between environmentally responsible business practices and advantages gained through competition. The findings emphasize how important it is for businesses to adopt sustainable business practices and the potential benefits that can be obtained by doing so.

13 Research in the Long Term

There is certainly need for future research in this sector, despite the fact that this study does give some important insights into the link between environmentally friendly business practices and a competitive edge in the pharmaceutical industry. Throughout the course of future study, one of the possible directions that may be taken is to increase the size of the sample so that it includes companies operating in a variety of additional markets and geographic locations. This would allow researchers to obtain a more accurate comprehension of the relationship between greening practices and comparative advantage, as well as further investigate the impact that particular greening practices have on a range of distinct aspects of competitive advantage. In addition, this would make it possible to obtain a more accurate comprehension of the relationship between greening practices and competitive edge.

14 The Study Has a Few Drawbacks

The findings that were reported in this article are susceptible to the same sorts of limitations that are associated with any other study. This study had a number of important limitations, one of the most notable being that the sample size was limited to pharmaceutical businesses that were located inside a certain geographical region. Because of this, it's likely that the findings don't apply to other areas of study or other parts of the world. In addition, this research failed to examine the potential costs associated with implementing greening practices. This could be an essential factor when assessing the overall impact that these practices have on a company's competitive advantage; however, this study did not investigate these potential costs. In spite of these limitations, this study provides valuable knowledge about the possible benefits that could be gained by businesses operating inside the pharmaceutical industry in Jordan by adopting environmentally friendly procedures. These potential benefits include a reduction in the number of wastes generated by the businesses as well as an increase in profits.

15 Recommendation

- Businesses in the pharmaceutical sector should make investments in environmentally conscious technology and aggressively encourage the usage of environmentally friendly products and services in order to remain competitive. This objective is attainable by lowering the amount of trash produced, making greater use of sources of renewable energy, and putting environmental management systems into place. If businesses implement these changes, they will increase their chances of achieving long-term sustainability, improving their competitive edge, and reducing the negative impact their operations have on the surrounding environment.
- Workers should be educated on the relevance of ecologically friendly actions such as the following, among

others: Educating workers about the significance of sustainable and the part they may play in the accomplishment of sustainability goals is one of the most important things that businesses can do to guarantee the successful adoption of greening methods. It is possible to achieve this objective through the implementation of a variety of strategies, including training programs, awareness programs, and communication initiatives.

- Encourage collaboration with customers and suppliers: In order to encourage environmentally responsible business practices across the supply chain, companies should foster close engagement with their customers and suppliers. This may be accomplished through establishing goals and standards related to sustainability, building partnerships, and offering incentives to encourage sustainable behavior.
- Foster innovation and creativity: In order for businesses to achieve a competitive advantage via the implementation of environmentally friendly practices, they need to foster innovation and creativity in the creation of environmentally friendly goods and services. Investing in research and development, partnering with academic institutions, and taking part in industry forums and networks are all viable options for accomplishing this goal.
- Monitor and quantify the effect of greening activities: Businesses should build metrics to monitor and assess the impact of their greening practices on market share, customer loyalty, and innovation in order to improve those areas of their business. Using techniques like as sustainability reporting, life cycle assessment, and stakeholder involvement are all viable options for accomplishing this goal.

In conclusion, businesses in the pharmaceutical sector that want to achieve a competitive edge must realize the need of adopting environmentally friendly business practices. The advice that has been presented can assist businesses in efficiently implementing and monitoring their greening processes, which can lead to the achievement of long-term sustainability as well as success in the marketplace.

Ethical Considerations

Ethical Factors to Take into Account, Ethical criteria, such as informed consent, confidentiality, and anonymity will be upheld during the course of the study. Participants will be given information regarding the nature of the study, as well as the objective of the study and their rights as research subjects. The information that was gathered will be kept secret and will not be traceable in any way, and the report that is produced will not contain any identifying details. In conclusion, the methodology that has been given above explains the research design, data collecting, sampling strategy, sample size, data analysis, and ethical considerations that will be utilized in the study. In addition to ensuring that the data that were gathered and analyzed are reliable and valid, the approach is also meant to comply to ethical norms.

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Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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