



**The Role of Green Marketing in Achieving
Competitive Advantage
“An Applied Study on Fast Food Industry in Egypt”**

submitted by

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ABSTRACT

The core objective of the research is to show the role of green marketing in achieving competitive advantage in fast food industry in Egypt,

and by reviewing previous studies in this regard a proposed model was designed for research hypotheses, illustrating the relationships between the research variables.

To collect the primary data, in-depth interview with the two scales: green marketing and competitive advantage. The necessary tests were conducted to assess the validity of the research variable models. The Questionnaire was directed to a sample of managers in international and national fast food restaurant, the sample size was (381 managers).

The researcher concluded that there is a significant impact of using the green marketing on the level of competitive advantage achieved in fast food industry under consideration.

Keywords: green marketing, competitive advantage.

1-Introduction

Green marketing has emerged as a pivotal approach environmental concerns and consumer expectation. First conceptualized in the 1970s, the discipline has evolved from basic ecological marketing to a comprehensive strategy emphasizing sustainability, social responsibility, and long-term ecological commitment(Kilbourne,1995; Shrum et al.,1995).Growing environmental challenges, including pollution, ozone depletion , and climate change, have highlighted the need for businesses to adopt green practices while balancing the demands of stakeholders and societal welfare (Chan,2000; Vilkaite-Vaitone & Skackauskiene,2019).

In response to heightened consumer environmental consciousness, organizations have implemented reactive and proactive green marketing strategies to align with shifting preferences. These strategies focus on preserving natural resources, minimizing environmental harm, and achieving competitive advantages while fostering sustainability(Vaccaro, 2009 ; Peattes & Charter, 2003). Research demonstrates that green marketing contributes to energy efficiency , cost reduction, and profit growth, providing mutual benefits for businesses and society (Simao & Lisboa, 2017).As environmental and social factors increasingly shape market dynamics , green marketing has become indispensable for modern business strategies (Vilkaite-Vaitone & Skackauskiene,2019).

2-Literature Review

2.1: The literature review of green marketing, competitive advantage, relationship between and competitive advantage, as well as the respective dimensions and measures. In Table (1) below, some of these prominent researchers and their contributions and outlined.

Table (1): Literature review of green marketing

First: Studies related to green marketing:

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Muisyo et al.,2022)	The effect of green HRM practices on green competitive advantage of manufacturing firms.	This research aims investigate how the top management in manufacturing firms can drive their operations toward a higher green competitive advantage.	324 Chinese employee from the manufacturi ng sector.	The research found that green human resource management practices including green selection , recruitment , training , development , compensation , and performance management, significant enhance the green competitive advantage ti Chinese manufacturing companies where companies that adopted this approach recorded impressive environmental performance.	This research agrees with the current research in applying proactive strategy that defines goals and responsibilities through creating programs for employees in companies, and instilling green values and principles in employees. They can also aid in controlling waste emissions and promoting environmentally friendly methods in manufacturing processes that gain a competitive advantage.

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Boah, C., et al.,2021)	Understanding the influence of environmental production practices in firm performance: a proactive versus reactive approach.	The research aims to explore environmental production practices from a proactive and reactive perspective in the context of developing countries.	278 managers of manufacturing companies.	The research indicated that among proactive and reactive environmental practices, the manufacturing sector.	This research agrees with the current research in using reactive and proactive environmental practices in manufacturing sectors.
(Saleem , F., et al., 2021)	Impact of environmental orientation on proactive and reactive environmental strategies: Mediating role of business environmental commitment.	The research aims to investigate the impact of environmental orientation and business environmental commitment in proactive and reactive environmental strategies.	152 SMEs (small and medium-sized enterprises) operating in three industrial cities of Pakistan.	Some firms opt for proactive environmental strategies (pressure in the form of external orientation as a business commitment to the natural environment is fostered). While others opt for a reactive environmental stance.	This research agrees with the current research in using green marketing strategies (proactive and reactive strategies) as a business commitment to the natural environment, and that identified that three are some firms opt for proactive environmental strategies while others opt for a reactive environmental strategy.
(Shulka, G.P & Adil,	A four-stage maturity model of green	The research objective is a maturity model describing a	Company ABC (a part of a large multinational	Demonstrated the maturity stage model of green	This research agrees with the current research in using the independent reactive

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
G.K., 2021)	manufacturing orientation with an illustrative-case study	process or an activity's characteristics at different stages of maturity.	I manufacturing firm representing a maturity stage model).	manufacturing with a real-life case.	strategy dimension (green marketing) to respond to environmental pressures.
(Mishra, P.&Yadav,M.,2021)	Environmental capabilities, proactive environmental strategy and competitive advantage :A natural – resource-based view of firms operating in India	The research aims to examine the relationship of environmental capability-PES- competitive advantage.	162 of senior executive in India.	The research results prove that deployment of environmental capabilities enable firms in India to gain competitive advantage o cost reduction and differentiation through PES(reactive environmental strategy)	This research agrees with the current research in reaching that PES(proactive environmental strategy) has a positive impact on an organization's ability to gain competitive advantage.
(Seroka -Stolka, O. & Fijorek, K. 2020)	Enhancing corporate sustainable development: Proactive environmental strategy, stakeholder pressure and the moderating	The research aims to evaluate the influence of pressure from 10 distinct types of stakeholders on the adoption of environmental strategies, with a special focus on the proactive environmental	10 types of stakeholder pressure including internal stakeholders, and external stakeholders.	Large companies seemed to be more resilient to pressure than smaller ones when adopting a proactive environmental strategy (PES).	This research agrees with the current research in adopting the company's proactive strategy (green marketing strategies) in responding to the stakeholder's pressure including the participation of top management

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
	effect of firm size.	strategy (PES), and the effect of the company size on this relationship.			ecological commitments as a way of achieving competitive advantage, by satisfying stakeholders by being more resilient to these pressures.
(Do., et al., 2019)	Exploring the proactivity levels and drivers of environmental strategies adopted by Vietnamese seafood export processing firms: A qualitative approach.	The research aims to explore and evaluate different proactivity levels and drivers of environmental strategies (ES) (green marketing strategies)	32 seafood export processing firms from Vietnam.	Revealed that reactive ES was adopted the most by Vietnamese seafood export processing firms, followed by opportunistic ES, focused ES, and proactive ES.	This research agrees with the current research in using different environmental strategies, 33% of small firms adopted reactive strategies, which are formulated for compliance with environmental regulations, and 13% of pioneer companies, used proactive strategies that cover a wide range of environmental commitments. The main objective of proactive strategies is to go beyond competitors by taking initiative in new practices.

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Choudhury, D., et al.2019)	Impact of strategic and tactical green marketing orientation on SMEs performance.	The research examines the impact of Tactical green marketing orientation (TGMO) and strategic green marketing orientation (SGMO) on small and medium enterprises-size (SMEs) performance and environmental performance.	595 owners /managers from different industry associations and clusters in the SMEs domain in South India.	Firms can increase their positive gains or performance by adopting environmentally friendly marketing strategies (green marketing strategies).	This research agrees with the current research by aiming at the government to design a policy, by training SMEs professionals about ecological balance; however, marketing platforms such as SMEs need to contribute to it and entice with the idea of green marketing orientation to improve the firm performance and environment performance.

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Chen, L.& Zhang, Q.,2018)	Study of paths of corporate proactive and reactive green innovation under multiple institutional pressures: Based on fuzzy sets qualitative corporative approach. In Proceedings of the 2018 1 st International Conference on Internet and E-Business.	The research aims to view a gap of unclear mechanisms in corporate proactive green innovation and reactive green innovation under multiple institutional pressures.	Firms manufacturing enterprises.	Research has shown that if an enterprise has high strategic flexibility and strong environmental ethics its internal motivation would be activated, so realize the proactive green strategy. In case of institutional deficiency, its capability stimulation. In case of lack of such flexibility, would promote the reactive green path.	This research agrees with the current research on using green marketing strategies. In a proactive strategy, companies started to integrate environmental ethics that could replace institutional pressure. Under institutional pressure, the reactive strategy was adopted in a flexible manner, promoting the company to carry out green marketing.

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Leonidou, L. C., et al., 2016)	External Determinants and financial outcomes of an eco-friendly orientation in smaller manufacturing firms.	The research examines the impacts of environmental factors on small firm's eco-friendly orientation. The extent to which this environmental orientation has a favorable effect on the firm's financial outcomes.	Smaller manufacturing firms.	findings confirmed the performance instrumental role of environmental regulations, environmental public concern, competitive intensity, and market dynamism in Barnes-sing an eco-friendly orientation within the small firms.	This research agrees with the current research that firms are likely to cultivate green thinking through certain external forces, namely environmental concern, competitive intensity, and market dynamism firms believe that taking environmental initiatives can enhance financial results (e.g.: profits, sales, market share) and the fact that eco-orientation can improve financial performance.
(Carballó-Penela, A.& Castro man-Diz, J.L.2015)	Environmental policies for sustainable development: an analysis of the drivers of proactive environmental strategies in the service sector.	The research aims to focus on increasing the knowledge of the influence of adopting green corporate strategies on sales and profits.	41 managers in Spanish environmental consulting companies.	Findings showed that a company's proactive strategies in terms of planning and organizational practices are a good predictor of environmental proactivity. The	This research agrees with the current research through environmental practices lead to sustained advantages and higher profits in the long run, but the expected return from environmental investment may not

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
				research emphasizes that the attitude of managers is strongly correlated with environmental proactivity.	be fully achieved in the short run. A company's proactive strategy is a good predictor of environmental proactivity in terms of planning and organizational practices.

Source adopted by the researcher.

2.2: Literature review of competitive advantage:

There are several studies that are interested in studying competitive advantage, its dimensions, and measures. Some of these researchers will be described in the following table (2)

Table (2): Literature review of competitive advantage.

Second: Studies related to competitive advantage:

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Ngo, Q.,2022)	Does environmental performance leverage the impact of environmental strategy on financial performance?	The research aims to examine the mediating effect of EP (environmental performance) on the link between ES (environmental	175 third-party logistic providers in Vietnam.	The results indicated that EP (environmental performance) partially mediates the link between ES	This research agrees with the current research on using environmental strategies (green marketing strategies) to find the success of the organization by dealing with

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
	A focus on third-party logistic providers.	strategies) and FP (financial performance).		(environmental strategies) and FP (financial performance).	environmental strategies that permit competitive advantage.
(Pan, C., et al.2020)	The double effects of female executives' participation in corporate sustainable competitive advantage through unethical environmental behavior and proactive environmental strategy.	The research aims to construct a relational model between female executives' participation in unethical environmental behavior, proactive environmental strategy, and corporate sustainable competitive advantage.	496 female executives for companies in the manufacturing sector in China.	The research showed that female executives' participation had double positive effects on corporate sustainable competitive advantage, which included both the inhibiting effect on unethical environmental behavior and the stimulating effect on proactive environmental strategies.	This research agrees with the current research in using proactive strategies, that improve energy-efficiency so save to save costs, which helps companies to shift from a "passive" role to an "active" one builds a green image, and helps it gain competitive advantages by win-win through proactive strategy.
(Mukonza, C., & Swarts, I., 2020)	The influence of green marketing strategies on	The research aims to enhance corporate image and business	South Africa's retail sectors.	The research established that green marketing	This research agrees with the current research in using green marketing as a

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
	business performance and corporate image in the retail sector.	performance by using green marketing strategies.		strategy has a positive effect on corporate image and on business performance that leads to enhancing corporate reputation, and in process, increasing profits.	tool to enhance corporate image and increase profits. It lets managers invest in green strategies, policies, and products that will be preferred by customers. In this way, a competitive advantage can be gained.
(Fousteris, A. et al., 2018)	The environmental strategy of businesses as an option under recession in Greece.	The research aims to examine the impact of environmental strategy on the growth of medium and large enterprises in all sectors of Greece.	188 managing directors of medium and large corporations.	The results revealed that environmental strategies create a competitive advantage.	This research agrees with the current research in using environmental strategies (proactive strategy) that create a competitive advantage through the improvement of financial performance.
(Singjai, K. et al., 2018)	Green initiatives and their competitive advantage for the hotel industry in developing countries.	The research aims to provide a better understanding of the interactions between organizational capabilities and the adoption of	Hotel industry in developing countries.	The result suggests that green strategies positively impact both environmental performance and organizational	This research agrees with the current research in using green strategies that lead to a clear environmental policy and support their knowledge about the environmental

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
		proactive environmental strategy (PES), as green initiatives, and of the specific benefits that can arise from such a strategy of obtaining a competitive advantage.		competitive advantage.	impacts of their industry.
(Valero-Gil., et al., 2017)	How is environmental proactivity accomplished? Drivers and barriers in firms pro-environmental change process.	The research aims to focus on the direct influence of the pro-environmental change of stakeholder pressure and the expectations of obtaining advantages.	303 firms pro-environmental change	The results show managers can interpret external pressures as opportunities or threats, depending on their expectations of obtaining a competitive advantage.	This research agrees with the current research in the interpretation of using environmental strategies (proactive and reactive strategies). Top management is especially relevant since their overall view enables them to detect possible environmental opportunities. Proactive strategies are adopted when managers view environmental pressure as opportunities, so pro-environmental

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
					changes as a possible generator of competitive advantage.

Source adopted by the researcher.

2.3: Literature review of relationship between green marketing and competitive advantage :

There are several studies that are interested in studying relationship between green marketing and competitive advantage, its dimensions, and measures. Some of these researchers will be described in the following table (3)

Table (3): Literature review relationship between green marketing and competitive advantage.

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Saeed,M.& Shafique,I.,2021)	Green customer –based equity and green purchase consumption behavior : the moderating role of religious commitment	The research aims to investigate the customer-based brand equity (CBBE) of green brands and their impact on green purchase consumption with the moderating effect of	315 customers in three large cities in Pakistan	The research results indicates a strong correlation between green products and brand loyalty when companies pursue green product initiatives that meet the goals and needs of eco-conscious customers , they create a repurchase	This research agrees with the current research in supporting proactive strategy that ultimately initiates for greening companies, focusing on brand performance , repurchase consumption to gain a competitive advantage.

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
		religious commitment		intention which leads to brand loyalty	
(Singh et al., 2020)	Green innovation and environmental performance: The role of green transformational leadership and green human resource management.	The research aims to investigate how top management's green orientation promotes green human resource management practices, enhancing environmental performance by developing internal competencies and equipping employees with necessary skills and experience.	309 manufacturing sector small-medium- sized enterprises(SMEs)	The research result found that top management enhances a manufacturing sector's environmental policy by selecting a hiring staff with green beliefs and values, training them for energy , recycling waste management , and sustainable resource utilization developing their skills for green goals and using incentive system to evaluate their contribution to achieve green objectives for competitive advantage.	This research agrees with the current research in emphasizing the use of top management to enhances a manufacturing sector's environmental policy and achieve green objectives, based on following the proactive strategy to gain competitive advantage .In the way , enterprises will eventually create environmental knowledge and competence by making every employee a green champion.

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Tsai et al.,2020)	Exploring the effect of Starbucks's green marketing as a context to explore how green marketing affects consumers purchase decisions.	The research aims to investigate the uses of Starbucks's to the green marketing context to explore how green marketing affects consumers purchase decisions.	Starbucks's coffee outlets	The research results showed that interest in public affairs, participation in them, and fulfilling responsibilities towards companies have a significant positive impact on improving the image of companies among consumers and distinguishing them from competitors.	This research agrees with the current research in using green marketing strategies , due to the consumers increasing awareness of environmental protection and intensifying market competition. Thus, Starbucks's has used green marketing as a vital component for surviving in highly competitive markets including consumers to purchase green products , developing brand loyalty, increasing revenue and market share, maintaining sustainable operations Starbucks's use green marketing as a way to stimulate a competitive advantage,

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Eneizan, et al.2019)	Effects of green marketing strategy on firm financial performance. The moderating role of government policy.	The research aims to explore the effects of a green marketing mix strategy on the overall performance and financial performance of firms.	386 green car dealers in Jordan.	The research found that firms facing stiff competition should take advantage of it by implementing green marketing, green marketing improves firm performance by offering product differentiation, improving image and reputation, and increasing sales of green products.	This research agrees with the current research in using green marketing to improve firm performance can provide product differentiation, enhance image and reputation, and increase sales that achieve a high level of returns.
(Wu et al., 2018)	What drives green brand switching behavior?	The research aims to explore the structural relationships among skepticism, experiential risk, cognitive dissonances , experiential quality , brand experience , and experiential satisfaction, switching intentions and switching behavior from	613 valid sample from consumers who had purchased environmental Shampoos. Such as "Body shop , Burt's Bees, Nature's Gate in Taiwan.	The results indicate the green brand experiential risk, green brand cognitive dissonance, green brand, experiential satisfaction. In addition green brand experiential satisfaction has an impact on green brand switching intentions which , in turn , positively influence green brand switching behavior.	This research agrees with the current research implementing a proactive strategy by practicing green human resource management investing in environmental management that can achieve advantages that allow them to be differentiated enhance their green image, improve their competitive capacity.

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
		the perspective of green branding.			
(Seroka-Stolka, K., 2018)	In the search for an environmental strategy model for the company case study	The research aims to identify and assess environmental practice implementations focusing on the environmental strategy as a model.	Company of food industry.	The result describes the evaluation of environmental practices indicating that the company has gradually implemented practices in individual dimensions, first full support and commitment from management, second opening communication with the stakeholders, and finally company plans and organizes the implementation of environmental practices.	This research agrees with the current research in using green marketing strategies (proactive and reactive strategies) in a way to maintain at least a competitive advantage. A proactive strategy is a planning strategy that develops eco-products, pro-ecological marketing, and ecological organizational structure. Reactive strategy as a perspective strategy adapts to the observation of necessary and minimum laws, and systems of the observation.

Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Ibrahim, et al.,2017)	The impact of applying green marketing on improving competitive advantage :an applied study on pharmaceutical companies.	The research aims to understanding how green marketing strategy can contribute to enhancing the company's image and increasing customer loyalty.	400 employees of pharmaceutical companies (Memphis company, Glaxo company, Sanofi company).	The research results showed that there is a positive relationship between applying green marketing strategy (are in line with modern environmental trends) and achieving competitive advantage in pharmaceutical companies.	This research agrees with the current research in applying green marketing strategy to achieve competitive through enhances the company's reputation and attract customers who care about the environment and increasing customer loyalty.
(Aonso-Almeida et al.,2015)	Proactive and reactive strategies deployed by restaurants of crisis: Effects on capabilities, organization and competitive advantage.	The research aims to study the impact of proactive reactive strategies adopted by restaurants on competitive advantage.	138 restaurants in Madrid, Spain	The research results showed that the proactive strategies have appositve impact on reducing costs and developing dynamic capabilities, while reactive strategies were effective in the short- term , which negatively affects competitive advantage.	This research agrees with the current research in comparing between applying the green marketing strategies (proactive and reactive strategy) in restaurants and reached to a positive impact in applying proactive strategy that achieve a competitive advantage by reducing costs and developing dynamic capabilities and a weak impact in achieving reactive strategy through its effective in achieving a competitive advantage.

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Author name and research data	Research title	Research objective	Applied field	Research result	Relationship between this research and the current research
(Arsceuleratne,D.& Yazdanifar,R., 2014)	How green marketing can create a sustainable competitive advantage for a business.	The research aims to discuss the importance of competitive advantage for a business firms and how green marketing strategy being relied upon by business firms to realize competitive advantage.	Business firms	The research results indicate the success of green marketing strategy, that rests largely on the contribution of achieving competitive advantage	This research agrees with the current research in reached that implying green marketing strategy brings a certain benefits to a business firms(reduction in cost of production , differentiation, fostering a positive image about brands, positioning of product in the mind of customer make it a top mind recall product) that can derive a competitive advantage.

Source adopted by the researcher.

Summary of literature review and research gap

- The researcher obtained the following conclusions based on the presentation of the literature review that dealt with green marketing and competitive advantage
Implementation of green marketing through support, commitment from management, and open communication with the stakeholders, since exerts pressures to implement pro-ecological measures. The results found that environmental proactivity was positively impacted on various indicators of competitive advantage such as cost savings, relationship with stakeholders, growth opportunities, and increased return on assets of an environmentally proactive firm.
- The implementation of green marketing has led to improved financial performance compared to other competitors and has a positive effect on corporate image that leads to increased sales and profits, also enhanced corporate reputation.

- Adopting green marketing reduces environmental impact while providing companies with a competitive advantage by reducing costs and adding value.
- Among proactive and reactive environment practices, the manufacturing sector, reactive widely adhered to because of institutional isomorphism, the need for organizational legitimacy, and the coercive nature and legal consequences of environmental legislations and standards.
- Suggesting the positive role of both internal and external environmental orientation for the pro-environmental strategies response of firms, internal environmental orientation is associated with a proactive environmental stance, and pressure in the forms of external environmental orientation results in reactive environmental strategies as a business commitment to the natural environment.
- Competitive advantage as a strong reputation among firms' customers, and increased competitiveness in international markets.
- The reputation advantage of the company will certainly favor a more profitable exploitation of marketing opportunities and hence increase market value.
- Business environmental commitment is presented as an explanatory mechanism for the relationship between internal and external environmental orientation and (proactive, reactive) environmental strategies.
- Green marketing is a well-established plan to serve environmental protection purposes by reducing the impact of their operations on the natural environment.

In light of the above, the research gap in previous studies that the current study seeks to cover, is represented by significant lack in studies that combined green marketing and competitive advantage, in addition to the lack of previous studies on fast-food industries in Egypt with regard to green marketing (as an independent variables), and competitive advantage (as a dependent variable), which validates the initial research gap, and so the contributions made by the current study, are in assessing green marketing by the model described in (the reactive strategy, which represented

in lack of organizational ecological commitment; easy to imitate products; tactical green marketing(price premiums which may not be perceived as worth the cost to customers; misleading advertising claims),(proactive strategy, which represented in, go above and beyond meeting regulations, relate environment to corporate mission, objectives, policies, organizational structure; top management ; ecological commitment), and measuring the competitive advantage with the model represented in (long-run increase in financial performance ; lower costs ; enhanced reputation for firm and alliances ; differentiation and brand loyalty ; satisfied stakeholders ; environmental sustainability) in Egypt's fast-food industries, which is a food sector.

3. Research problem

The industrial sector is considered one of the most important public sectors in Egypt, although industrial establishments in Egypt do not pay much attention to green marketing. Many of the goods and services provided to the final consumer and industrial purchaser are not represented by any of the environmental criteria. Therefore, there are many problems facing the Egyptian environment that affect its environmental reality (CAPMAS, 2009). Considering the growing awareness of consumers towards the environment and, consequently, the growing size of the green economy worldwide, the delay in implementing green marketing strategies in the food industry to achieve competitive advantage could add to the risks of this industry in the medium and long term (Ibrahim, M., et al,2017).

In the light of the results of the exploratory study with all its methods, previous studies, and reports issued by the environmental status list, and a review of research literature, several phenomena were revealed, represented by the low level of environmental orientation and lack of understanding by enterprises of the significance of using green marketing and, as a result, their failure to produce goods with the needs and aspirations of the environment in mind to satisfy the needs and

wants of the target consumers, undervaluing the opportunity to gain a competitive edge as a result of non-compliance enterprise's inability to apply environmental regulations and laws, as well as their absence of taking a serious role in solving environmental problems in the right and appropriate manners. The inability of organizations to fulfill their environmental obligations to society and, as a result, the failure to create a more favorable social environment that is ultimately advantageous to enterprise in the long run .

The researcher was then able to embody and crystallize the issue of the study in that "the adoption of fast-food industry for green marketing ensures their survival and continuity. It also allows them to enter new markets and occupy strong positions compared to their competitors. The research problem can be stated in the following questions by applying the idea of green marketing and its impact on gaining a competitive advantage in Egypt. The Ministry of Health revealed that 17% of all food available to consumers ends up in garbage bins, contributing to 8% of greenhouse gas emissions. Based on the purpose of this study is to: Study the role of green marketing in achieving the competitive advantage of fast-food industries in Egypt.

Based on the purpose of this study is to: Study the role of green marketing in achieving the competitive advantage of fast-food industries in Egypt, which is expressed in the following questions that detect the aspects of this problem:

- 1- What is the level of ecological orientation (green marketing) in fast-food industries in Egypt under consideration?
- 2- What is the level of applying green marketing in fast-food industries in Egypt under consideration? Is there a difference between the fast- food industries in Egypt under consideration in terms of applying green marketing?
- 3- What is the level of ecological commitment in fast-food industries in Egypt under consideration? Is there a difference between the fast-food industries in Egypt under consideration in terms of achieving a competitive advantage?

4- Is there a relationship between applying of green marketing and achieving competitive advantage in fast-food industries under consideration? To what extent does green marketing contribute to achieving competitive advantage in fast-food industries under consideration?

4. Research Objectives

Considering the problems raised in the hypotheses of this research, this research seeks to improve the environmental situation (green marketing) of fast-food industries using green marketing as an opportunity to achieve a competitive advantage. To achieve this, a set of objectives can be formulated as follows:

- 1- Study and analyze of the relationship between green marketing and the competitive advantage of fast-food industries under consideration.
- 2- Study and analyze the differences between the fast-food industries under consideration in terms of applying green marketing (proactive strategy).
- 3- Study and analyze the differences between the fast-food industries under consideration in terms of applying green marketing (reactive strategy).
- 4- Study and analyze the differences between fast-food industries of achieving competitive advantage.

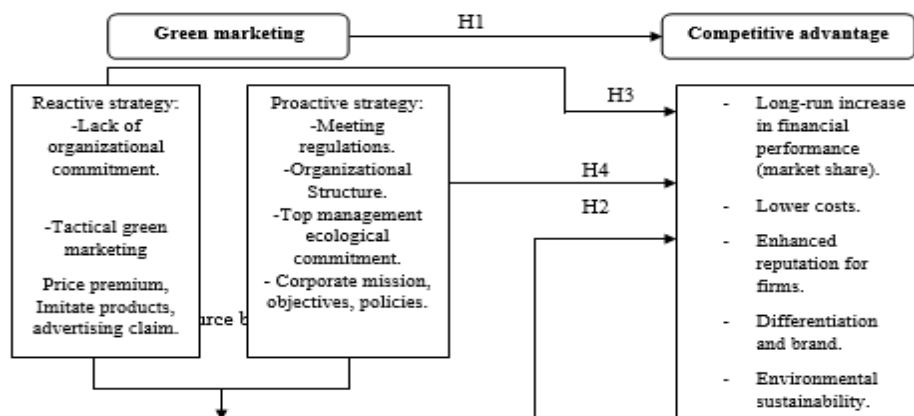
5. Research conceptual model and hypotheses

Considering the following conceptual (figure 2), the research hypotheses are set as follows:

- H1: There is no significant impact of using the green marketing on the level of competitive advantage achieved in fast food industry under consideration.
- H2: There is no significant impact of using the proactive strategy and reactive strategy on the level of competitive advantage achieved in fast food industry under consideration.
- H3: There is no significant impact of using the proactive on the level of competitive advantage achieved in fast food industry under consideration.

H4: There is no significant impact of using the reactive on the level of competitive advantage achieved in fast food industry under consideration

Figure (2): Conceptual Model and Hypotheses:



d6. Research Importance

-The study derives its scientific importance from the fact that is one of the important topics that enrich the scientific library and benefit researchers and those interested in the field of business administration.

-The researcher also achieves its scientific importance in that green marketing plays an important role in achieving a competitive advantage, by adopting green marketing as an integrated intellectual philosophy and therefore using scientific methods and effective strategies for green marketing. Therefore, this study is an extension of the efforts made in discussing special issues in it is used in the environment, which represents a scientific addition to the field by studying the relationship between green marketing and achieving competitive advantage.

-The interest of this research is to analyze the relationship between green marketing and the competitive advantage of the managers under consideration.

-There is a need to study green marketing as a lack of environmental compliance leads to negative results, and knowing the sources of non-compliance and its causes

enables management to control non-compliance effectively to mitigate its negative effects and benefit from its positive effects.

7. Research Methodology

7.1 Secondary data

Secondary data refers to the data that have been previously gathered and have used to illustrate and describe that research variables and their dimensions. Hence, research relies in books, journals, reports, reports, and thesis that related to the research variables (green marketing and competitive advantage) to collect these data, to determine the research problem, and develop the hypotheses.

7.2 Primary data

Primary data represents the data that is collected for the first time by the researcher through a survey by using depth interview. According to (Sekaran and Bougie,2016) collecting primary data requires designing a questionnaire and determining target population and sample, as shown in the following subsections.

7.2.1 The questionnaire design

To collect data, the researcher adopted on five-point-likert scale to develop the questionnaire, where it includes 90 questions divided into three parts. The first part consists of 65 question, and it is related to green marketing dimensions (proactive strategy) the researcher adapted this measure given the work of (Valero-Gil,J. et al.,2017 ;Papadas,K.K et al.,2017 ; Seroka-Stolka,O.,2018; Papadas,K.K et al.,2018 ; Singjai,K.et al .,2018; Duque-Grisales,E.et al.,2019 ;Lin,R. et al.,2019 ; Das, A. et al.,2019; Leonidou,L. et al.,2014 ; KangY.& He, X., 2018 ; Do,B. et al.,2019 ; Gunarathn,A.D. et al.,2021) and reactive strategy) the researcher adapted this measure given the work of (Valero-Gil,J. et al.,2017 ;Papadas,K.K et al.,2017 ; Papadas,K.K et al.,2018 ; Singjai,K.et al .,2018; Peng, B., et al., 2018 ; Lin,R. et al.,2019 ; Gunarathn,A.D. et al.,2021 ; Duque-Grisales,E.et al.,2019 ; Mishra , P.& Yadav,M.,2021 ;Ruokonen, E., Temmes,A.,2018 ;

Seroka-Stolka,O. & Fijorek,K. 2020) and were subsequently modified to suit fast food industry in Egypt.

The second part consists of 25 question, and it related to competitive advantage dimensions (Long-run increase in financial performance (market share), Lower costs, Enhanced reputation for firms, Differentiation and brand, Environmental sustainability) , which is adapted from (Leonidou,L. et al.,2014 ; Valero-Gil,J. et al.,2017; Papadas,K.K et al.,2017 ; Papadas,K.K et al.,2018 ;Primc, K.&Cater, T., 2016; Schmitz,E.A et al. ,2019 ; Das, A. et al.,2019; Duque-Grisales,E.et al.,2019 ; Mishra , P.& Yadav,M.,2021 ; Gunarathn,A.D. et al.,2021) and then modified to be suitable to fast food industry in Egypt.

7.2.2 Research population

The target population consists of all managers in fast food industry (international and national industry) in Egypt.

Considering the reports of Central Agency for Public Mobilization and statistics, the total number of managers in these studied fast food industry are 40000.

7.2.3 The Research Sample

According to the research objectives and hypotheses and due to the limitations of costs , time , and efforts , the researcher employed random sampling from the research population and targets such ad green marketing and competitive advantage. The sampling units consists of managers of all fast food industry in Egypt.

8-Theoretical Framework

In this part, the researcher will deal with the theoretical framework of the research variables in terms of concept and dimensions.

8.1 Green marketing:

Is the marketing of products that are presumed to be environmentally safe. It is essentially a way to brand your marketing message to capture more of the market

by appealing to people's desire to choose products and services that are better for the environment.

Reactive strategy:

Referred to a compliance strategy, is characterized by requiring limited resources being very expensive and low in risk, and following regulations of environmental management, also it allows a level of organizational commitment, and low involvement of management, and depends on short-term orientation. A reactive strategy is a strategy that happens when companies respond to the changes as they develop in the external environment.

Proactive strategy:

Focus on the needs of customers, also related to eco-effectiveness that aims beyond merely reducing negative environmental impact by ending ecological degradation (Vaccaro,V.,2009)

8.2 Competitive advantage:

In most industries, some firms are more profitable than others, regardless of whether the average profitability of the industry is high or low, the high-performing firms conceivably possess something special and hard to imitate that allows them to outperform their rivals. These special assets are referred to as competitive advantage (Bharadwaj,et al.,2015)

9.Field Study

9.1 Evaluation of internal consistency reliability:

	Scale	Number of Items	Cronbach's Alpha
Top management ecological commitment	x1_1	17	0.948
Relate environment to corporate mission, objectives , policies , organizational structure	x1_2	10	0.937
Meeting environmental regulations	x1_3	3	0.910
Proactive strategy	X1	30	0.897
Tactical green marketing (Imitate product)	x2_1	15	0.902
Tactical green marketing (Price premiums)	x2_2	9	0.859

	Scale	Number of Items	Cronbach's Alpha
Tactical green marketing (Advertising claim)	x2_3	9	0.939
Lack of organizational ecological commitment	x2_4	2	0.890
Reactive strategy	X2	35	0.802
Green marketing	X	65	0.794
Market share	y1	4	0.901
Lower costs	y2	5	0.891
Enhanced reputation for firms	y3	4	0.786
Brand loyalty	y4	4	0.874
Environmental sustainability	y5	4	0.910
Differentiation	y6	4	0.848
Competitive advantage	Y	25	0.813

Source : prepared by the researcher based on the results of the statistical analysis(SPSS).

Commentary on Cronbach's Alpha Values"

- The scales "x1_1" ($\alpha = 0.948$) and "x1_2" ($\alpha = 0.937$) show exceptionally high reliability, indicating that the items within these scales are measuring a consistent underlying construct. A Cronbach's Alpha value above 0.9 is considered excellent.

- Scales "x1_3" ($\alpha = 0.910$) and "x2_1" ($\alpha = 0.902$) also demonstrate good reliability. An Alpha value between 0.8 and 0.9 indicates that the items are reliable and provide a good measure of the construct being assessed.

- The "y2" scale ($\alpha = 0.891$) and "y5" scale ($\alpha = 0.910$) similarly indicate strong consistency among the items.

- Scales such as "x2_2" ($\alpha = 0.859$) and "y4" ($\alpha = 0.874$) are at the lower end of the "good" reliability spectrum but are still considered acceptable for research purposes.

- The "y1" ($\alpha = 0.901$) scale also shows acceptable reliability.

- The "y3" scale ($\alpha = 0.786$) indicates moderate reliability, suggesting that while the items are somewhat consistent, there may be room for improvement. Items in this scale might benefit from further examination to enhance reliability.

- The "x2_4" scale ($\alpha = 0.890$) with only 2 items is still considered reliable, indicating good internal consistency despite the small number of items.

- The item-total statistics indicate how the deletion of an item would affect the overall reliability. In most cases, the Cronbach's Alpha if item deleted remains high, suggesting that no individual item negatively impacts the reliability of the scale.

Overall, the Cronbach's Alpha values across all scales indicate a strong level of internal consistency, with the majority of scales exceeding the threshold for good reliability. This suggests that the instruments used in the analysis are appropriate for measuring the constructs of interest. Items with lower correlations and higher variances might require further investigation or potential revision to improve overall scale reliability.

In summary, the reliability analysis supports the validity of the measurement instruments utilized in the study, thereby enhancing the credibility of the findings derived from these scales.

9.2 Test of hypotheses

Any significant tests conducted can be reported here. If hypothesis tests are conducted, this section should detail the acceptance or rejection of hypotheses and provide insight into their statistical implications.

Statistical Commentary on Group Statistics and Independent Samples T Test"

The analysis compares two groups ("Group 1 and Group 2") across various variables. Below is a detailed summary of the "Group Statistics" and "Independent Samples T Test**", along with statistical interpretations.

1. Group Statistics Table** (G1,N=230; G2, N=151) and Independent Samples T Test Table" (Df=379) for "x"

	Variable	Group	Mean	SD	t	sig
Top management ecological commitment	x1_1	1	2.532	1.158	7.443	.000
		2	1.810	0.346		
Relate environmental to corporate mission, objective, policies, organizational structure	x1_2	1	4.211	0.436	21.152	.000
		2	2.932	0.744		
Meeting environment regulations	x1_3	1	4.263	0.558	18.737	.000
		2	2.883	0.879		
Proactive strategy	x1	1	3.669	0.612	17.781	.000
		2	2.542	0.595		
Tactical green marketing (Imitate product)	x2_1	1	4.303	0.380	19.140	.000
		2	3.238	0.702		
Tactical green marketing (Price premiums)	x2_2	1	4.212	0.353	20.348	.000
		2	3.102	0.703		
Tactical green marketing (Advertising claim)	x2_3	1	2.759	1.056	9.143	.000
		2	1.911	0.531		
Lack of organizational ecological commitment	x2_4	1	2.385	1.320	5.280	.000
		2	1.765	0.716		
Reactive strategy	x2	1	3.415	0.616	14.974	.000
		2	2.504	0.522		
Green marketing	x	1	3.668	0.469	19.590	.000
		2	2.639	0.546		

#Group 1 = International industry

#Group 2 = National industry

Table : Group Statistics ** (G1,N=230; G2, N=151) and Independent Samples T Test Table" (Df=379) for "Y"

	Variable	Group	Mean	SD	t	sig
Market share	y1	1	2.536	1.240	6.348	.000
		2	1.848	0.598		
Lower costs	y2	1	2.597	1.229	6.117	.000
		2	1.948	0.531		
Enhanced reputation for firms	y3	1	3.786	0.698	17.146	.000
		2	2.326	0.962		
Brand loyalty	y4	1	4.140	0.724	17.064	.000
		2	2.555	1.090		
Environmental sustainability	y5	1	4.004	0.770	16.798	.000
		2	2.464	1.016		
Differentiation	y6	1	4.321	0.641	20.447	.000
		2	2.722	0.883		
Competitive advantage	y	1	3.525	0.605	18.709	.000
		2	2.296	0.659		

#Group 1 = International industry

#Group 2 = National industry

- "Higher means for Group 1": Across all variables (x1_1, x1_2, x1_3, x2_1, x2_2, etc.), "Group 1" consistently shows higher means compared to "Group 2". For instance:

- "x1_2": Group 1 has a mean of "4.2113", while Group 2 has a mean of "2.9316".

- "x2_1": Group 1 has a mean of "4.3026", while Group 2 has a mean of "3.2384".

- "y5": Group 1 has a mean of "4.0043", while Group 2 has a mean of "2.4636".

- "Larger standard deviations for Group 1": Group 1 tends to have larger standard deviations than Group 2, indicating more variability within the group.

- "Significant differences": The "t-test" for each variable reveals highly significant differences between Group 1 and Group 2. All p-values are "0.000**", indicating that for all variables, the means of Group 1 and Group 2 differ significantly.

- "Largest t-values":

- "x1_2" has the highest t-value of "21.152**", indicating a substantial difference between the means of Group 1 and Group 2 for this variable.
- Similarly, "x2_2" shows a very high t-value of "20.348**", suggesting that the difference in means is substantial.
- "Relatively smaller t-values":
 - "x2_4" has a lower t-value of "5.280**" compared to other variables, although it is still significant, indicating a smaller but meaningful difference between the two groups for this variable.
- "Group 1 consistently has higher means" across all variables compared to Group 2, suggesting that the individuals in Group 1 tend to score higher on these measures.
- The "Independent Samples Test" confirms that these differences are statistically significant, with "all variables showing p-values less than 0.01**", indicating that the differences in means between Group 1 and Group 2 are not due to random chance.
- "Key variables with the largest differences" include "x1_2" and "x2_2", both of which show very large t-values and thus represent the most substantial differences between the two groups.

In conclusion, the analysis provides strong evidence that there are significant differences between Group 1 and Group 2 across all variables, with Group 1 scoring consistently higher than Group 2. These findings suggest that the groups differ meaningfully on all measured aspects.

Multiple Discriminant Function Analysis"

"Eigenvalues":

Function	Eigenvalue	% of Variance	Canonical Correlation
1	1.224	100.0	0.742

- The eigenvalue of "1.224" indicates a strong discriminating function, and the canonical correlation of "0.742" shows a strong relationship between the discriminant function and group membership.

"Wilks' Lambda":

The Role of Green Marketing in Achieving Competitive Advantage

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.450	301.712	3	.000

- Wilks' Lambda of "0.450" indicates the discriminant function explains a large proportion of the variance. The significant p-value ($p < 0.001$) confirms that the function effectively discriminates between the groups.

"Standardized Canonical Discriminant Function Coefficients":

	Variable	Coefficient
Top management ecological commitment	x1_1	-0.131
Relate environmental to corporate mission, objective, policies, organizational structure	x1_2	0.847
Meeting environment regulations	x1_3	0.245

- "x1_2" has the largest coefficient ("0.847**"), making it the most important variable in separating the groups.

"Group Centroids":

Group	Centroid
1	0.894
2	-1.362

- The large difference in centroids indicates that the discriminant function separates the groups effectively.

"Classification Results":

	Group	Predicted Group Membership	% Correct
International industry	1	93.5% correctly classified	93.5%
National industry	2	79.5% correctly classified	79.5%
	Total	87.9% of cases correctly classified	

- The model classified "87.9%" of cases correctly, suggesting strong predictive power.

Conclusion"

Multiple Discriminant Function Analysis is a powerful tool for distinguishing between groups based on multiple predictor variables. By evaluating the discriminant functions, eigenvalues, Wilks' Lambda, and classification results, we can assess the accuracy and significance of the model in predicting group membership.

The analysis also provides insights into which variables are most important in separating the groups.

Statistical Commentary on Group Statistics, Tests of Equality of Group Means, and Discriminant Analysis

The analysis explores the relationship between groups (**Group 1 and Group 2**) across several variables using discriminant analysis. Below is a comprehensive interpretation of each table.

1. Group Statistics Table

		Group 1		Group 2		Total	
	Variable	Mean	SD	Mean	SD	Mean	SD
Top management ecological commitment	x1_1	2.532	1.158	1.810	0.346	2.246	0.990
Relate environmental to corporate mission, objective, policies, organizational structure	x1_2	4.211	0.436	2.932	0.744	3.704	0.852
Meeting environment regulations	x1_3	4.263	0.558	2.883	0.879	3.716	0.974

- **Group 1** consistently shows higher means for all variables compared to **Group 2**.
 - For **x1_1**, Group 1 has a mean of **2.5319**, while Group 2 has a mean of **1.8102**.
 - For **x1_2**, Group 1 has a mean of **4.2113**, while Group 2 has a mean of **2.9316**.
 - These differences suggest that Group 1 scores higher on these variables than Group 2.
- The total group mean for each variable lies between the means of the two groups, indicating a difference in group performance on these variables.

2. Tests of Equality of Group Means Table

	Variable	Wilks' Lambda	F	df1	df2	Sig.
Top management ecological commitment	x1_1	0.872	55.394	1	379	.000
Relate environmental to corporate mission, objective, policies, organizational structure	x1_2	0.459	447.390	1	379	.000
Meeting environment regulations	x1_3	0.519	351.079	1	379	.000

Key Observations:

- **Wilks' Lambda** is a measure of how well each variable discriminates between the two groups. Lower values indicate better discrimination.
 - For **x1_2**, Wilks' Lambda is **0.459**, indicating that it is a strong discriminator between Group 1 and Group 2.
- **F-values** are large for all variables, with **x1_2** having the highest F-value (**447.390**). This suggests significant differences between the group means for all variables.
- **p-values** are all **0.000**, indicating that the group means for **x1_1**, **x1_2**, and **x1_3** differ significantly.

3. Summary of Canonical Discriminant Functions

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.224	100.0	100.0	0.742

Key Observations:

- The **Eigenvalue (1.224)** indicates the proportion of variance explained by the discriminant function.
- **Canonical Correlation (0.742)** measures the strength of the relationship between the discriminant function and the groups. A value of **0.742** suggests a strong relationship between the discriminant function and group membership

4. Wilks' Lambda Test of Function(s)

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.450	301.712	3	.000

Key Observations:

- **Wilks' Lambda (0.450)** shows that the discriminant function explains a large portion of the variance between groups.

- The **Chi-square statistic (301.712)** with a **p-value of 0.000** indicates that the discriminant function is statistically significant in distinguishing between the two groups.

5. Standardized Canonical Discriminant Function Coefficients

Variable	Function 1
x1_1	-0.131
x1_2	0.847
x1_3	0.245

Key Observations:

- x1_2 has the largest coefficient (**0.847**), indicating that it contributes the most to distinguishing between the two groups.
- x1_1 has a negative coefficient, but its contribution is relatively small compared to x1_2.

6. Structure Matrix

Variable	Function 1
x1_2	0.982
x1_3	0.870
x1_1	0.346

Key Observations:

- x1_2 has the highest correlation with the discriminant function (**0.982**), confirming its importance in distinguishing between the two groups.
- x1_3 also contributes significantly, with a correlation of **0.870**.

7. Functions at Group Centroids

Group	Function 1
1	0.894
2	-1.362

Key Observations:

- The **group centroids** show that Group 1 has a positive centroid (**0.894**), while Group 2 has a negative centroid (**-1.362**). This large difference

between the centroids indicates that the discriminant function effectively separates the two groups.

8. Classification Results

Classification Results ^a					
		restu12	Predicted Group Membership		Total
			1	2	
Original	Count	1	215	15	230
		2	31	120	151
	%	1	93.5	6.5	100.0
		2	20.5	79.5	100.0
a. 87.9% of original grouped cases correctly classified.					

Key Observations:

- **87.9%** of the original grouped cases were correctly classified by the discriminant function. This suggests that the model performs well in predicting group membership.
- **Group 1** was classified with high accuracy (**93.5%**), while **Group 2** was classified with **79.5%** accuracy.

Summary of Findings:

- **x1_2** is the most important variable for discriminating between Group 1 and Group 2, followed by **x1_3**.
- The **canonical discriminant function** effectively separates the groups, as seen in the large difference between group centroids and the high classification accuracy.
- The model is statistically significant and explains a substantial portion of the variance between the groups, with **87.9%** of cases correctly classified.

This analysis demonstrates that the groups differ significantly across all variables, with **x1_2** playing a dominant role in distinguishing between them.

Statistical Commentary on Group Statistics, Tests of Equality of Group Means, and Discriminant Analysis”

The analysis focuses on distinguishing two groups based on various predictor variables (x2_1, x2_2, x2_3, and x2_4) using discriminant analysis. Below is a comprehensive interpretation of the provided tables.

1. Group Statistics Table"

	restu12	Variable	Mean	Std. Deviation
Tactical green marketing(Imitate product)	1	x2_1	4.303	0.380
Tactical green marketing(Price premiums)		x2_2	4.212	0.353
Tactical green marketing(Advertising claim)		x2_3	2.759	1.056
Lack of organizational ecological commitment		x2_4	2.385	1.320
Tactical green marketing(Imitate product)	2	x2_1	3.238	0.702
Tactical green marketing(Price premiums)		x2_2	3.102	0.703
Tactical green marketing(Advertising claim)		x2_3	1.911	0.531
Lack of organizational ecological commitment		x2_4	1.765	0.716
Tactical green marketing(Imitate product)	Total	x2_1	3.881	0.743
Tactical green marketing(Price premiums)		x2_2	3.772	0.752
Tactical green marketing(Advertising claim)		x2_3	2.423	0.978
Lack of organizational ecological commitment		x2_4	2.139	1.160

- "Higher Means for Group 1": Group 1 shows significantly higher mean values for all variables compared to Group 2.

- For "x2_1", Group 1 has a mean of "4.3026", while Group 2 has a mean of "3.2384".

- For "x2_2", Group 1 has a mean of "4.2116", while Group 2 has a mean of "3.1016".

- This indicates that Group 1 consistently scores higher on these measures compared to Group 2.

- "Total Group Means": The total means provide a summary view, showing the overall group performance on each variable.

2. Tests of Equality of Group Means Table"

	Variable	Wilks' Lambda	F	df1	df2	Sig.
Tactical green marketing(Imitate product)	x2_1	0.508	366.358	1	379	.000
Tactical green marketing(Price premiums)	x2_2	0.478	414.032	1	379	.000
Tactical green marketing(Advertising claim)	x2_3	0.819	83.593	1	379	.000
Lack of organizational ecological commitment	x2_4	0.931	27.883	1	379	.000

- “Wilks' Lambda” values indicate the effectiveness of each variable in distinguishing between the groups. Lower values suggest better discrimination.

- For “x2_2”, Wilks' Lambda is “0.478”, indicating it is the most effective discriminator among the variables.

- “F-values” are large for all variables, suggesting significant differences between group means.

- For instance, “x2_2” has the highest F-value of “414.032**”, reinforcing that the means of Group 1 and Group 2 differ significantly for this variable.

- “p-values** (Sig.) are all “0.000**”, indicating that the group means for all variables differ significantly, confirming that the variables effectively distinguish between the two groups.

3. Summary of Canonical Discriminant Functions”

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.220	100.0	100.0	0.741

- The “Eigenvalue (1.220)” shows that the first canonical discriminant function explains a significant amount of variance in the data.

- The “Canonical Correlation (0.741)**” indicates a strong relationship between the discriminant function and group membership, suggesting effective separation.

4. Wilks' Lambda Test of Function(s)”

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.450	300.622	4	.000

- A Wilks' Lambda value of “0.450” indicates that the discriminant function explains a large portion of the variance between groups.

- The “Chi-square statistic (300.622)**”, with a “p-value of 0.000**”, confirms that the discriminant function significantly separates the two groups.

5. Standardized Canonical Discriminant Function Coefficients"

	Variable	Function 1
Tactical green marketing(Imitate product)	x2_1	0.343
Tactical green marketing(Price premiums)	x2_2	0.635
Tactical green marketing(Advertising claim)	x2_3	0.264
Lack of organizational ecological commitment	x2_4	-0.075

- "x2_2" has the highest coefficient ("0.635**"), indicating that it is the most influential variable in distinguishing between the groups.

- "x2_4" has a negative coefficient, suggesting that it has an inverse relationship with group membership, but its contribution is relatively weak.

6. Structure Matrix"

	Variable	Function 1
Tactical green marketing(Imitate product)	x2_1	0.946
Tactical green marketing(Price premiums)	x2_2	0.890
Tactical green marketing(Advertising claim)	x2_3	0.425
Lack of organizational ecological commitment	x2_4	0.246

- The structure matrix shows the correlation between each variable and the discriminant function. "x2_2" has the highest correlation ("0.946**"), indicating it is the most important variable in separating the groups.

7. Functions at Group Centroids"

	Group	Function 1
International industry	1	0.893
National industry	2	-1.359

- The centroids indicate that Group 1 has a positive centroid value ("0.893") and Group 2 has a negative centroid value (" -1.359"), demonstrating effective separation by the discriminant function.

8. Classification Statistics”

Classification Results ^a					
		restu12	Predicted Group Membership		Total
			1	2	
Original	Count	1	224	6	230
		2	23	128	151
	%	1	97.4	2.6	100.0
		2	15.2	84.8	100.0
a. 92.4% of original grouped cases correctly classified.					

- Overall, “92.4%” of the cases were correctly classified by the discriminant function, indicating strong predictive accuracy.

- “Group 1” is classified with high accuracy (“97.4%”), while “Group 2” has a lower accuracy (“84.8%”), suggesting that the model is more effective in predicting Group 1.

Summary of Findings”:

- The analysis successfully differentiates between the two groups using the predictor variables, with “x2_2” emerging as the most significant variable.

- The discriminant function has a strong predictive capability, as evidenced by the high classification accuracy.

- Wilks' Lambda, eigenvalues, and canonical correlations indicate that the discriminant analysis effectively captures the differences between the groups.

This analysis illustrates the effectiveness of discriminant analysis in identifying and validating the differences between groups based on multiple variables, providing valuable insights for further research or decision-making.

Statistical Commentary on Group Statistics, Tests of Equality of Group Means, and Discriminant Analysis”

The analysis focuses on distinguishing two groups based on several outcome variables (y1, y2, y3, y4, y5, and y6) using discriminant analysis. Below is a comprehensive interpretation of the provided tables.

1. Group Statistics Table"

	restu12	Variable	Mean	Std. Deviation
Market share	1	y1	2.5359	1.24049
Lower costs		y2	2.5965	1.22862
Enhanced reputation for firms		y3	3.7859	0.69783
Brand loyalty		y4	4.1402	0.72401
Environmental sustainability		y5	4.0043	0.76992
Differentiation		y6	4.3207	0.64125
Market share	2	y1	1.8477	0.59789
Lower costs		y2	1.9483	0.53089
Enhanced reputation for firms		y3	2.3262	0.96220
Brand loyalty		y4	2.5546	1.09007
Environmental sustainability		y5	2.4636	1.01628
Differentiation		y6	2.7219	0.88343
Market share	Total	y1	2.2631	1.08723
Lower costs		y2	2.3396	1.05911
Enhanced reputation for firms		y3	3.2073	1.08169
Brand loyalty		y4	3.5118	1.17814
Environmental sustainability		y5	3.3937	1.15516
Differentiation		y6	3.6870	1.08123

- "Higher Means for Group 1": Group 1 shows significantly higher mean values for all outcome variables compared to Group 2.

- For example, for "y4", Group 1 has a mean of "4.1402", whereas Group 2 has a mean of "2.5546".

- "Standard Deviations": Group 1 has larger standard deviations, indicating more variability in responses compared to Group 2, particularly evident in variables such as **y1** and **y2**.

2. Tests of Equality of Group Means Table"

	Variable	Wilks' Lambda	F	df1	df2	Sig.
Market share	y1	0.904	40.299	1	379	.000
Lower costs	y2	0.910	37.413	1	379	.000
Enhanced reputation for firms	y3	0.563	293.991	1	379	.000
Brand loyalty	y4	0.566	291.190	1	379	.000
Environmental sustainability	y5	0.573	282.160	1	379	.000
Differentiation	y6	0.475	418.067	1	379	.000

- "Wilks' Lambda Values": Lower values indicate a better ability to discriminate between groups. For example, "y6" has the lowest Wilks' Lambda of "0.475", indicating it is the most effective discriminator.
- "Significant F-values": All variables show high F-values, indicating significant differences in group means.
 - "y6" has the highest F-value of "418.067**", suggesting a substantial difference between the groups for this variable.
- "Significance": All p-values are "0.000**", confirming that the means for all outcome variables differ significantly between the two groups.

3. Summary of Canonical Discriminant Functions"

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.536	100.0	100.0	0.778

- The "Eigenvalue (1.536)" suggests that the first canonical discriminant function captures all of the variance in the data.
- A "Canonical Correlation of 0.778**" indicates a strong relationship between the discriminant function and group membership.

4. Wilks' Lambda Test of Function(s)"

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.394	349.968	6	.000

- The Wilks' Lambda of "0.394" indicates that the discriminant function explains a significant portion of the variance between groups.

- The “Chi-square statistic (349.968)** with a p-value of “0.000** confirms that the discriminant function significantly separates the groups.

5. Standardized Canonical Discriminant Function Coefficients”

	Variable	Function 1
Market share	y1	0.135
Lower costs	y2	-0.207
Enhanced reputation for firms	y3	0.552
Brand loyalty	y4	0.147
Environmental sustainability	y5	-0.082
Differentiation	y6	0.682

- “y6” has the highest standardized coefficient (“0.682**), indicating it contributes most significantly to distinguishing between the groups.

- “y3” also plays a vital role with a coefficient of “0.552**.

- Negative coefficients for “y2” and “y5” suggest an inverse relationship with group membership.

6. Structure Matrix”

	Variable	Function 1
Differentiation	y6	0.847
Enhanced reputation for firms	y3	0.711
Brand loyalty	y4	0.707
Environmental sustainability	y5	0.696
Market share	y1	0.263
Lower costs	y2	0.253

- The structure matrix shows correlations between the predictor variables and the discriminant function.

- “y6” has the highest correlation (“0.847**), confirming its importance in differentiating the groups.

7. Functions at Group Centroids”

	Group	Function 1
International industry	1	1.002
National industry	2	-1.526

- The large difference in centroids indicates that the discriminant function effectively separates the two groups.
- Group 1 has a positive centroid ("1.002") while Group 2 has a negative centroid ("-1.526").

8. Classification Statistics"

Classification Results ^a					
		restu12	Predicted Group Membership		Total
			1	2	
Original	Count	1	221	9	230
		2	35	116	151
	%	1	96.1	3.9	100.0
		2	23.2	76.8	100.0
a. 88.5% of original grouped cases correctly classified.					

- Overall, "88.5%" of cases were correctly classified by the discriminant function, indicating strong predictive performance.
 - Group 1 has a high classification accuracy ("96.1%"), while Group 2's accuracy is lower at "76.8%", suggesting the model is more effective in predicting Group 1.
 - The discriminant analysis successfully differentiates between the two groups based on the outcome variables, with "y6" being the most significant variable for discrimination.
 - The analysis demonstrates a strong relationship between the discriminant function and group membership, evidenced by high canonical correlations and low Wilks' Lambda values.
 - The model performs well, with a high percentage of correctly classified cases, indicating its robustness and effectiveness in predicting group membership.
- This comprehensive analysis highlights the utility of discriminant analysis in understanding group differences based on multiple outcome variables, providing valuable insights for further research or decision-making.

10. Research Recommendation

1- Fast food restaurants should adopt the concept of green marketing within the company's strategic plan and consider it as part of the company's culture to maintain a clean environment as well as satisfy the needs of customers, which is reflected in the company's profit.

2- Fast food restaurants should continue their commitment to fulfill their responsibilities towards the environment, and they should also contribute a positive role by contributing to the treatment of general problems existing in the environment through which they operate.

3- Develop a clear strategy to adopt an environmentally friendly green production pattern in fast food restaurants and work on developing the procedures followed in the development of this path.

4- Encouraging the research and development process by fast food restaurants to make their products environmentally friendly and reach the lowest cost through the optimal use of resources

5- The need to set a low-profit margin on the green products most used by consumers to encourage a culture of Environmental Conservation Working to distinguish the product through a specific symbol or design that benefits and demonstrates that the environmentally friendly product is on the market.

6- The need for continuous review of restaurant strategies to reformulate the main objectives in line with the application of the concept of green marketing.

7- Commitment to Corporate Social Responsibility, which plays a crucial role in the penetration of green products into the market.

8- Investing in capacity building, training, and education: there is a need for capacity building programs, training, and improving the skills of employees, to prepare them for the green transformation.

9- Enhancing the role of the private sector and civil society: to turn green, where changes must be made in doing business, the private sector must take into account social and environmental standards when practicing various activities, and it is necessary to establish rules and regulatory mechanisms such as reducing pollution and emissions and others, civil society can play an important role in facilitating the transformation process by helping entrepreneurs to benefit from specialized markets and financial resources provided by the green economy.

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