DIGITALES ARCHIV

Shaukat, Fatima; Zaman, Hafiz Muhammad Fakhar; Nguyen Thi Thanh Nga et al.

Article

The interplay of eco-innovation and market uncertainty on green marketing orientation and business performance

Marketing i menedžment innovacij

Provided in Cooperation with:
ZBW OAS

This Version is available at:
http://hdl.handle.net/11159/652850

Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Mitglied der
Leibniz-Gemeinschaft

THE INTERPLAY OF ECO-INNOVATION AND MARKET UNCERTAINTY ON GREEN MARKETING ORIENTATION AND BUSINESS PERFORMANCE

Fatima Shaukat, https://orcid.org/0000-0002-7712-5755
Ph.D., School of Management, Northwestern Polytechnical University, China
Hafiz Muhammad Fakhar Zaman, https://orcid.org/0000-0002-3340-4867
Ph.D., School of Management and Economics, Kunming University of Science and Technology, China
Thi Thanh Nga Nguyen, https://orcid.org/0009-0000-3973-0607
Ph.D., Thai Nguyen University of Economics and Business Administration, Vietnam
Paovangsa Souvanhxay, https://orcid.org/0009-0004-4138-6533
Ph.D., School of Management and Economics, Kunming University of Science and Technology China
Corresponding author: Hafiz Muhammad Fakhar Zaman, ameerzadafakhar@stu.kust.edu.cn
Type of manuscript: Research paper

Abstract: *This study aims to contribute to the literature by investigating the impact of eco-innovation on business performance within the institutional theory framework and from a resource-based perspective. Specifically, this paper explores the influence of eco-innovation on business performance by adopting a green marketing orientation. This study builds a complete framework that establishes a connection between environmental innovation, market uncertainty, green market orientation, and corporate performance. The current investigation uses the conceptual underpinnings of the resource-based view (RBV) to evaluate the potential mitigating impact that a company's eco-innovation attempts may have in the setting of unpredictable market dynamics. It is widely held that to develop a positive correlation between corporate performance and eco-innovation, it is vital to possess a comprehensive understanding of the environment. In contrast to several other industries, the pharmaceutical sector has the capacity to address environmental concerns through the implementation of unique solutions tailored to its specific context, namely, its services. This article addresses the moderating influence of market uncertainty and analyses eco-innovations as a reaction to their green marketing-oriented holistic approach to achieving competitive advantages and business performance. It examines eco-innovations as a reaction to their green marketing orientation and holistic approach to achieving competitive advantages and business performance. The integration of institutional theory and green marketing theory is also included, as is an examination of the moderating effect of market uncertainty. According to a survey of Pakistan's pharmaceutical business, the empirical findings reveal that a competitive environment strongly urges the industry to adopt a holistic green strategy. Eco-innovation serves as a mediator between green marketing orientation and business performance and directly impacts business performance. The findings will assist management and corporate leaders in their decision-making process on using eco-innovation to achieve sustainability objectives. This study addresses the existing theoretical and empirical knowledge gap by providing insights that can assist corporate leaders in effectively leveraging and attaining improved outcomes by implementing holistic green marketing strategies. This approach aims to enhance their understanding of the mediating and moderating elements. Furthermore, market uncertainty mitigates the effect of eco-innovation on business performance while amplifying its contribution to the link between green marketing orientation and performance. Future research directions, ramifications, and consequences for eco-innovation studies in the Pakistani context are considered.*
Keywords: green marketing; eco-innovations; competitive environment; developing country; pharmaceutical.

1. Introduction. Over the past decade, issues including the exhaustion of national environmental resources, the decline of biodiversity, and the acceleration of climate change have come to the forefront of people's minds (Choudhury et al., 2019; Keijzers, 2002; Zahari & Esa, 2018). These issues and subsequent conversations about a sustainable environment have piqued the interest of researchers, who have conducted comprehensive studies to investigate and speculate on their impact and the responses of major traded firms (Amegbe et al., 2017). To stay competitive and reduce their environmental impact, many modern businesses have adopted sustainability-focused mission statements and developed eco-innovative production procedures to meet the needs of their clientele (Bathmathan & Rajadurai, 2019). The origins of green marketing, ecological approaches, and associated research can be traced back to the 1980s when corporations initially acknowledged the necessity of safeguarding the environment due to increasing consumer interest in environmentally friendly products and services. Governments increasingly prioritize environmental concerns, leading to heightened expectations for corporations to lessen the environmental damage that their activities cause (D'Attoma & Ieva, 2022). Politics, society, and business are currently preoccupied with environmental challenges. The impetus is for businesses to include environmental goals in their plans, particularly innovation initiatives. Nevertheless, there needs to be more research on how to gauge how this dedication to the environment affects revolutionary outcomes in a developing nation such as Pakistan. This study hopes to learn how environmental innovation affects corporate performance through a mediation analysis (Cornejo-Cañamares et al., 2021).

The examination of the impacts of regulation has garnered significant attention in academic research. Specifically, countless investigations have been performed to delineate the aspects that influence strategic environmental orientation, including institutional, stakeholder, and organizational drivers (Banerjee et al., 2003; Zhu et al., 2013). According to (Cao et al., 2012; Hofer et al., 2012; Li et al., 2018), despite the significant effect of competitive pressure on a company's operations, little research has been conducted on how competitive pressure affects its strategic environmental initiatives (Li et al., 2018; Soewarno et al., 2020). When organizations are competitive, it is essential to investigate their reactions to the market (Liu & Atuahene-Gima, 2018; Tyler et al., 2018). As the modern market becomes more competitive and the demand for a sustainable environment becomes more pressing, many corporations are researching the impact of a green marketing strategy on their financial performance. Therefore, the firm must look into its future by monitoring its standing in the market (Gomes et al., 2018). During the previous few decades, both customers and the market have raised the bar for businesses' environmental management methods and performance. Adopting a green market orientation is anticipated to significantly influence the corporate greening process, as well as the creation and promotion of environmentally sustainable products and services that customers highly value. According to (Chen et al., 2015; Crittenden et al., 2011), this is particularly important in light of the competitive landscape, where businesses actively engaged in environmental management pose a challenge. A recent study (Wang et al., 2022) also contended that a growing consumer preoccupation with environmental matters prompts many businesses to work toward more concrete sustainability objectives. Businesses with a green market orientation actively seek new environmental capabilities, products, and services to improve their bottom line. It offers a framework for distributing and acquiring institutional means capable of ensuring business performance in environmental management (Jia et al., 2022). This study's primary goal is to determine how the competitive environment affects a company's propensity to pursue a green market strategy.

Natural resource-based views (NRBV) argue that in light of growing ecological and competitive difficulties, businesses must change their methods, personnel, and resources to lessen their harmful environmental consequences (Fraj et al., 2013; Hart & Dowell, 2011). By focusing on green market orientation, according to (Chen et al., 2015; Crittenden et al., 2011), businesses can develop and employ specialized skills to achieve their environmental management goals that go beyond the original idea of market orientation. The association between the extent to which businesses adjust their internal priorities to enhance environmental health and customer happiness and their "green market orientation" has been observed by (Fraj et al., 2013). The significance of adopting a green market orientation to enhance performance is a subject of great interest when examining the determinants that influence a company's choice to embrace this particular strategy (Shaukat & Ming, 2022). In that study (Alsheikh, 2020), four primary green marketing techniques were analysed: defensive green, lean green, extreme green, and shaded green. Previously, many studies have presented contradictory results. According to (Hasan & Ali, 2015), no definitive link was established between increased company success and green marketing, and (Eneizan et al., 2016) concluded that eco-friendly advertising tactics improved business results. However, (Kinoti, 2016) discovered no relationship between these strategies and gross profit or market share. Since the foundation of this research was built on the

contradictory results of earlier research, established economies were the primary focus of prior studies, and developing economies, particularly Pakistan, were given relatively less attention (Ahmad et al., 2020).

Green innovation, or environmental innovation, has developed as a credible strategy for enhancing eco-efficiency, waste management, and environmental preservation (Arici & Uysal, 2022; Borsatto & Bazani, 2021; Chen et al., 2006a; Cheng & Krumwiede, 2012). As per the European Commission's Directorate General for Enterprise and Industry, "this concept" pertains to advancing innovative and economically feasible products, processes, and services. The objective is to meet human desires and enhance individuals' quality of life while optimizing the utilization of finite resources and materials (such as energy and surface area) and minimizing the generation of detrimental by products. The study's author asserted that green innovation involves introducing and improving processes, goods, and organizations with improved technology and organizational skills; preventing pollution; designing green products; and saving energy (Chen et al., 2006). Small businesses rely heavily on environmental innovation to reduce negative environmental impacts and industrial pollution (Wong et al., 2012). Researchers have observed that there has been a notable increase in the number of scholarly articles addressing the subject of eco-innovation. This trend reflects the expanding interest in the practical implementation of this organizational asset by businesses and its study within academic circles (Bossle et al., 2016; Ch'ng et al., 2021; Larbi-Siaw et al., 2022). Despite this, many debates remain, highlighting the need for additional studies into how eco-innovation affects business performance. This is because there is a deficiency of evidence and theoretical justification for the connection between corporate, economic, and eco-innovative performance (Cai & Zhou, 2014; Ch'ng et al., 2021; Karakaya et al., 2014; Lee & Min, 2015; Santos et al., 2019).

Studying the relationship between eco-innovation and sustainability has been significant, although the results have been mixed in the literature on most industrialized economies (Ahmad et al., 2021; Evans et al., 2017; Geng et al., 2021), and according to (Ahmad et al., 2021; Larbi-Siaw et al., 2022), it is not enough to improve executives' understanding of eco-innovation and long-term profitability. According to many legendary scholars (Bitencourt et al., 2020; García-Granero et al., 2020; Tsai & Liao, 2017), issues related to this subject remain unresolved in emerging and developing economies. While some studies find no connection or a U-shaped connection between eco-innovation and long-term viability, others find strong positive connections (Liu et al., 2020; Zhang & Walton, 2017). On the other hand, there is a shortage of literature showing the impact of environmental innovation in Pakistan. These divergent outcomes underscore the imperative for further inquiry into the foundation of eco-innovation, its connection to sustainability, and the lack of empirical evidence in growing economies and developing nations. These consequences are investigated here, adding to the existing body of literature. The purpose of this study is to construct a comprehensive framework that establishes a connection between environmental innovation, a competitive landscape, green market orientation, and company performance and to investigate the emergence and influence of green marketing orientation on both environmental innovation and the overall success of businesses.

When a business releases cutting-edge items to the market in response to shifting consumer preferences or emerging market prospects, it immediately plunges into a highly competitive landscape. According to renowned studies (T Anning-Dorson, 2016; Liu & Atuahene-Gima, 2018; Purnama & Subroto, 2016), this occurs due to shifts in the business environment characterized by elevated levels of environmental unpredictability and fiercer levels of competition. The disparities between the key constructs suggest that the moderation potential of market turbulence should be considered when analysing the connection between sustainable company performance and eco-innovations. The significance of a company's resources in facilitating the effective execution of eco-innovation initiatives, leading to enhanced ecological, social, and financial outcomes, has been well recognized in the existing scholarly literature (Ch'ng et al., 2021). The present study utilizes the resource-based view (RBV) theoretical framework to investigate the potential mitigating impact of a firm's eco-innovation endeavours in the context of unpredictable market dynamics. Using institutional theory as a guide, this study looks at the effects of eco-innovation on company performance and sustainability. Specifically, this study explores the use of the resource-based viewpoint theory to determine the eco-innovation efforts of a company's customers and other stakeholders. The current study contributes to the academic discourse on green marketing and eco-innovation through three separate avenues. One original contribution of this research is an empirical evaluation of the role of the competitive environment as a driver influencing holistic green marketing in developing and emerging economies.

The second is to use environmental innovation to determine whether green marketing strategies improve business performance rather than to include environmental innovation as a part of green marketing. The third and final phase entails assessing the influence of market uncertainty on the relationship between eco-

innovation and business performance and on the correlation between green marketing orientation and business performance; it is essential to note that a moderate correlation exists. The act of furnishing pertinent information and constructive comments to management and key decision makers is of utmost importance due to the unique nature of the study. This is the first study in Pakistan to investigate the impact of eco-innovation on business performance, with market uncertainty serving as a moderating factor. Accordingly, this research fills a theoretical and empirical void by helping business leaders capitalize on and attain better results from holistic green marketing through a better understanding of its mediating and moderating elements. Given the predominant focus of recent research on firms in Western and industrialized nations, it is imperative to emphasize the significance of promoting awareness regarding the involvement of emerging economies in attaining sustainable development goals (SDGs) and driving the sustainability agenda (Lu et al., 2021). Studies conducted in advanced economies have important lessons to learn, but their results must be checked in developing countries.

2. Literature Review. This research contributes to the existing body of knowledge on green marketing and sustainability by elucidating a previously unexplored relationship that has been apparent in recent years but has yet to be sufficiently expounded upon in prior research. However, numerous studies that have examined the effects of green marketing or environmental strategy on business performance have yet to address the importance of eco-innovation. The connection between green marketing and eco-innovation has been the subject of past research; a complete analysis incorporating the moderating influence of market uncertainty has yet to be conducted. Green marketing orientation theory (GMO) is grounded in competitive pressure, eco-innovation, market uncertainty, and company performance (Papadas et al., 2017). This theory serves as the framework for this paper. This research adopts a holistic green marketing strategy approach with a corporate perspective, encompassing firms' strategic, internal, and tactical actions toward sustainability and green innovations. A concise review of the pertinent literature is presented to provide context and an understanding of the relationships between these elements.

2.1. Green marketing orientation.

Given its potential benefits for businesses and the environment, "green marketing" appears in managerially oriented research (Papadas et al., 2017). In essence, green marketing endeavours to harmonize traditional corporate practices with the ecological and social dynamics inherent in the marketplace (Peattie & Belz, 2010). There are a multitude of approaches for delineating "green marketing". However, according to (Papadas et al., 2017), satisfying a company's customers and society's demands in an economically viable way is ecologically sound and socially just. The concept of green marketing orientation (GMO) is multidimensional. To a certain extent, the specific combination of dimensions might vary from industry to industry and region to region (Chahal et al., 2014). Businesses have several options for pursuing green strategies that cater to the diverse array of requirements of stakeholder groups as they work to achieve their goals (Cronin et al., 2011). Green innovation, green alliances, and greening techniques are the three primary types of green strategy explored within the academic marketing discourse. Previous studies on green marketing have identified strategic, tactical, and internal green marketing as crucial control components (Chamorro & Bañegil, 2006; Leonidou & Leonidou, 2011). Remarkably, few empirical research methodologies exist that offer a comprehensive framework capable of providing a fully authorized approach to green marketing. The subject of the study has provided ample evidence showcasing a diverse range of strategies employed in green marketing. The effectiveness of these strategies is closely linked to how they are executed (Baker & Sinkula, 2005; Fraj et al., 2011; Rajadurai et al., 2021). The fundamental idea behind green marketing orientation (GMO) pertains to how a firm perceives and regards the environment as a whole (Papadas et al., 2017). This research proposes three distinct levels of strategic green marketing orientation (SMO), namely, tactical green marketing orientation and internal green marketing orientation, as integral components of GMO architecture. Their scholarly work (Papadas et al., 2019) concisely examines the pertinent literature. Strategic green marketing orientation (SGMO) refers to the degree to which an organization integrates environmental considerations into its marketing decision-making procedures. It is argued that a firm's corporate strategy should incorporate environmentally friendly characteristics to address criticisms against the conventional marketing approach of offering more comprehensive discounts and benefits (Dolan, 2002; Kilbourne et al., 2002). Companies must broaden their marketing strategies to encompass the protection of the well-being of society's most susceptible individuals and the preservation of the Earth's natural ecosystems. According to (Stoeckl & Luedicke, 2015), the "triple bottom line" refers to social, economic, and environmental outcomes.

Implementing short-term tactics within a Tactical Green Marketing Orientation (TGMO) aims to enhance the environmental sustainability of the traditional marketing mix, as discussed by (Choudhury et al., 2019). This aspect encompasses implementing adjusted pricing policies for green products (Zhu & Sarkis, 2004) and

adopting measures to enhance environmental performance within the supply chain (Pujari et al., 2003). In addition, product strategies can be adopted to mitigate ecological impacts (Pujari et al., 2003), and promotional techniques can be used to curtail the adverse environmental repercussions associated with a firm's marketing communications (Chen, 2001; Kilbourne et al., 2002). Marketers must develop qualitative and original strategies to significantly contribute to sustainability principles across aspects of the marketing mix (Vilkaite-Vaitone & Skackauskiene, 2019). Companies that care about environmental protection can profit from the adaptability provided by these strategies, which include measures such as lowering energy use and pollutant levels (Ottman & Books, 1998). The concept of "internal green marketing orientation" (IGMO) pertains to using strategies within an organization to enhance environmental consciousness and cultivate a more widespread culture of sustainability (Papadas & Avlonitis, 2014). This category encompasses several activities, such as employee training, company-wide awareness-raising, and environmental leadership (Charter, 2017; Wells et al., 2015). The likelihood of employees obtaining the knowledge and expertise necessary to implement effective environmental plans increases if that knowledge is disseminated and embedded in the firm (McDonagh & Prothero, 2014). Cultivating environmental champions inside an organization through environmental awareness education and employee training is possible (McDaniel & Rylander, 1993).

2.2. Competitive Environment and Green Marketing Orientation.

The degree to which different external settings are marked by fierce rivalry is called the environment's competitiveness (Matusik & Hill, 1998). It measures the competitive environment regarding the number of rival businesses and the breadth of their operations (Miller, 1987). Industries have been revolutionized due to greater competition and consequential effects on the costs and prices of administrative services. According to (Fraj et al., 2013; Hart & Dowell, 2011), the natural resource-based view (NRBV) proposes that businesses assign valuable resources and competencies to mitigate the environmental influence of their manoeuvres, thereby transforming potential risks into competitive advantages. The concept of GMOs refers (Banerjee et al., 2003) to the acknowledgement of the importance of ecological challenges that organizations encounter. Scholars (Chen et al., 2015; Crittenden et al., 2011) have suggested that this approach can enable businesses to cultivate exclusive competencies to achieve their ecological administration goals. Improving internal operations and the external environment is a potential strategy for organizations to prioritize customer happiness. However, the effectiveness of this strategy is dependent on the organization's green market orientation, as highlighted by previous studies (Fraj et al., 2013; Papadas et al., 2017). Competitive pressure has been acknowledged as a significant element of business performance, as highlighted by (Rugman & Verbeke, 1998). To maintain competitiveness, firms must adjust their strategies and operations to align with the evolving business landscape, characterized by heightened competitive pressures and a changing competitive landscape. Firms need to adapt their processes and plans to the changing environment if they want to remain modest as the intensity of competitive pressures and the composition of the competition increase. For the last two decades, the market and customers have placed more demands on businesses regarding their environmental management policies and results (Bathmathan & Rajadurai, 2019). It is incumbent upon companies to ensure that their products and services are designed and manufactured in such a way that negative environmental consequences are avoided. Establishing a positive ecological reputation, a solid environmental track record, and cultural values that promote environmental management are all essential for a company to remain competitive in today's market (Carbone & Moatti, 2011). Hence, it is imperative to encourage businesses to factor ecological concerns into their competitive strategy to effectively address the market's demands and clientele (Slater & Narver, 1995). Several scholars (Banerjee et al., 2003; Chen et al., 2015) have proposed creating a green market orientation (GMO) to address this hostile market. The concept of GMO was developed as a continuation of the term "market orientation", which describes a business's philosophy of identifying and satisfying customer wants and needs through its offerings (Cheng & Krumwiede, 2012; Jaworski & Kohli, 1993). Such an orientation guides a company's strategic decisions based on its core values and beliefs (Cheng & Krumwiede, 2012; Wiklund & Shepherd, 2005). There has been some research into how a company's focus on the market affects its ability to develop and provide distinctive client benefits (Jaworski & Kohli, 1993). Profitable customer value development and competitive advantage maintenance depend on intangible resources such as green market orientation (Ketchen Jr et al., 2007; Slater & Narver, 1995). Firms are inclined to embrace a green market orientation (Chang, 2011; Chen et al., 2015; Slater & Narver, 1995) because of the expanding expectations of customers for products that are environmentally friendly and for services, as well as because of the involvement of rivals in environmental management (Fraj et al., 2013). The given information leads to the following hypothesis.

H₁: Firms that operate in an environment of greater competition more readily adopt a green market orientation.

2.3. Green marketing orientation, eco-innovation and business performance

Eco-innovation was first defined as "conventional" innovations with environmental applications, especially those that lessen human interference with the natural world. The provided definitions encapsulate the institutional pressures exerted on businesses to deliberate the implications of the effects of their activities on ecosystems and communities. According to many scholars (Hojnik & Ruzzier, 2016; Kuo & Smith, 2018), debating primarily involves mitigating their carbon footprint by implementing strategies such as minimizing greenhouse gas emissions and effectively managing solid and liquid waste. Recent developments in the literature on eco-innovation suggest that innovations may be ecological and sustainable; that is, they can enhance the standard of living on Earth and guarantee that the status quo is maintained (Hellström, 2007; Levidow et al., 2016). Institutional theory examines how businesses are affected by their surrounding culture and society (DiMaggio & Powell, 1983; Scott, 2001; Scott, 2005). Society's assumptions, attitudes, and expectations shape businesses' organizational practices, as proposed by (Scott, 2001; Scott et al., 1994; Scott, 2005). Institutional theory analyses how social forces such as these affect business practices (Berrone et al., 2013; Scott, 1995). It claims that businesses implement changes because they expect benefits from doing so. They claim that established norms are more influential than efficiency considerations or the best possible distribution of resources in an organization (Galbreath et al., 2021). According to (Albort-Morant et al., 2016), ecologically sustainable development and eco-innovation concepts are relatively recent and have garnered increasing attention in academic research. Furthermore,, (Guoyou et al., 2013) emphasized examining the relationship between tactics implemented within an organization's environment and their subsequent impact on competitive performance, specifically regarding eco-innovation. Based on the study conducted by (Hart, 1995), the resource-based view (RBV) fails to adequately consider the limitations imposed by the natural environment and biophysical aspects. The growing recognition of the significance of ecological factors for resource-based view (RBV) growth has resulted in the establishment of the natural resource-based view (NRBV). Moreover, the study conducted by (Hart & Dowell, 2011) suggested that human action must shift to more targeted tactics to overcome environmental limitations. Eco-innovation has evolved to be used synonymously with these tactics (Huang et al., 2016). According to (Chen et al., 2006), a simultaneous reduction in environmental impact and increased productivity might be achieved. The adoption of the NRBV framework in this study is justified by its widespread use in research analysing the relationship between ecological management and financial success (Hart & Dowell, 2011), which is directly relevant to the current analysis. Environmental sustainability is one of the most critical factors in developing eco-innovation that satisfies customers' requirements (Albino et al., 2009). In addition, it is the most critical factor that pushes businesses to create eco-friendly goods (Dangelico et al., 2017). Past literature has stressed the importance of companies engaging in serious green innovation and employing eco-friendly technology, which represents a sensible approach to resource utilization and advancements in environmental policies and efficiency (Galdeano-Gómez et al., 2013). Eco-innovation increases economic performance, solves environmental innovation difficulties, and helps the environment. This approach is crucial for helping society, organizations, and businesses achieve ecological sustainability (Chu et al., 2019). Eco-innovation cannot be fully realized without environmental policies and legislative support (de Medeiros et al., 2014). The available scholarly sources indicate that an organization that prioritizes eco-efficiency and environmental stewardship has the potential to address environmental deterioration and foster eco-innovation (Chang, 2016; Lopes et al., 2017). Contemporary eco-innovation is primarily driven by the increasing environmental consciousness of individuals and their aspiration to foster sustenance. Therefore, the following hypothesis is proposed considering the abovementioned literature and rationales.

H₂: Green marketing orientation (GMO) has a significant positive impact on eco-innovation (EI).

Eco-innovation distinguishes itself from competitors and enhances the financial performance of environmentally concerned enterprises through three primary mechanisms. In the context of eco-innovation, the attainment of dual objectives, namely, economic and environmental benefits, is more important for green-oriented enterprises than non-eco-innovation, which primarily emphasizes economic gains (Ghisetti & Pontoni, 2015). In contrast, eco-innovation creates innovation by creating creative eco-technologies and launching novel environmentally friendly products into the market (Andersen, 2010). However, according to (Aragón-Correa et al., 2008), eco-innovation allows environmentally conscious firms to reap the advantages of effectively utilizing resources and improving energy efficiency. Another study by (Berrone et al., 2013) suggested that the positive correlation between eco-innovation and the level of distinctiveness exhibited by companies results in improved performance. The assessment of green-oriented firms places significant

emphasis on eco-innovation due to its correlation with a greater likelihood of technical distinctiveness than non-eco-innovation (Cainelli et al., 2015). There is a pressing need to reassess manufacturing methods and product development strategies to attain a harmonious equilibrium between economic considerations and environmental goals. Safeguarding the focal firm's knowledge base is crucial for the development of eco-innovation, as it is directly linked to the limited availability and high cost of new technologies needed for information design. According to (Helfat, 1994), companies that prioritize focus may experience more significant benefits from innovation due to the inherent challenges faced by competitors in reproducing such efforts. Third, incorporating environmental concerns into technological innovation is characterized in the literature as more challenging in eco-innovation than in non-eco-innovation (De Marchi, 2012). Many scholarly studies (Cheng et al., 2014; Rennings, 2000; Triguero et al., 2013) have concluded that environmentally sustainable business models are examples of eco-innovation. Due to increased synergies, eco-innovation could significantly affect the financial success of environmentally conscious businesses. The RBV views a firm's superior performance as primarily determined by the efficiency with which its resources are coordinated (Barney, 1991). According to (Cheng et al., 2014), several scholars have posited that the use of eco-innovation strategies contributes to enhancing corporate performance. According to previous research (Hamelink & Opdenakker, 2019), introducing new business models can influence a company's success. An industrial organization's eco-friendly performance can be enhanced by concurrently applying three distinct categories of eco-innovation: process, product, and organizational. Subsequently, an organization has the potential to enhance its social enactment by allocating resources toward research and development activities focused on eco-innovations, implementing distinctive green management strategies, and fostering employee awareness and engagement in eco-innovation initiatives (Larbi-Siaw et al., 2022). Several scholars (Dangelico et al., 2017; Singh et al., 2020) have discussed in their studies that eco-innovation has been regarded mainly by professionals in industry and academics as a potent and more effective approach to reducing environmental concerns. Consequently, the following postulates the theoretical argumentation offered thus far.

H_3: Eco-innovation positively affects business performance.

Ecological marketing, environmental marketing, eco-friendly marketing, and green marketing are all synonymous. Sustainable marketing is a term used to describe a specific approach to marketing that emphasizes the marketing and consumption of goods and services that reduce or eliminate harmful effects on the natural world. A scholar (Polonsky, 1994) noted that "green marketing" includes adjusting products, adjusting the manufacturing process, changing packaging, and adjusting promotional strategies. Another study (Juwaheer et al., 2012) suggested developing green branding, packaging, labelling, and advertising as a more comprehensive green marketing strategy to stimulate demand for environmentally friendly goods. According to (Mourad & Ahmed, 2012), green marketing generates financial gains while upholding social responsibility. According to a study by (Chamorro & Bañegil, 2006), green marketing seeks to minimize waste across all stages of product creation, pricing, placement, and advertising. Notably, the concept of green marketing, as supported by (Gordon et al., 2011), spans the entirety of the process, spanning from production to post purchase service, intending to achieve a harmonious equilibrium between financial and ecological aspects for the organization. Many different things fall under the umbrella of "green marketing", according to (Sarkar, 2012), such as adjusting products, altering production methods, reworking packaging, reimagining aesthetics, and re-launching promotional campaigns. Green marketing is an umbrella term for promoting everything from consumer goods to industrial products and services. According to the study conducted by (Chen et al., 2006), eco-innovation encompasses two main components: green products and green processes. Green products refer to the technological advancements involved in developing environmentally friendly products. This includes incorporating energy conservation measures, waste recycling techniques, and pollution prevention technologies. The emergence of environmental innovation in the industrial sector has been recognized as a critical strategic tool for attaining sustainable growth, primarily due to growing ecological pressures (Chang, 2011). Within the realm of SMEs, the concept of eco-innovation pertains to introducing novel goods that are more environmentally sustainable, as well as adapting current products, processes, or manufacturing methods to align with eco-friendly principles (Oxborrow & Brindley, 2013). The correlation between new product creation and environmental innovation is significant. The need for constant innovation in response to rising global competition and shifting consumer tastes is unavoidable. According to the work of (Pujari et al., 2003), "green product development" is defined as "environmental new product development" that takes into account environmental concerns during the design process. Thus, rethinking items that use natural resources, materials, disposal methods, or production processes to lessen their environmental impact are also considered green. However, (Johansson, 2002) coined the term "eco-design" to describe products that aim to reduce their influence on the environment without sacrificing other design considerations. Based on their research, the

authors (Ar, 2012) concluded that the essential component in a company's ability to sustain itself is adopting new technologies and creating innovative products and services that benefit the environment. As a result, many businesses are ready to devote resources to creating environmentally friendly products. As a result, addressing the tension between economic growth and environmental conservation by creating eco-innovations is a win–win situation (Chang, 2011). Therefore, the successful creation of environmentally friendly products is assisting businesses in improving their efficiency. However, despite the emergence of green products in the market, research (Mei et al., 2012) needs to demonstrate several improvements in green marketing techniques that ultimately lead to their failure. Marketers of green products and services must ensure that their advertising does not mislead customers. This approach is necessary to ensure that customers experience the claimed benefits. Organizations can use the resource-based view (RBV) theory (Graci & Dodds, 2008) to set themselves apart from the pack in the environmentally conscious market by focusing on what sets them apart from other businesses. Hart's resource-based concept, published in 1995, describes how investing in scarce, irreplaceable, precious, and arduous-to-imitate resources can improve the effectiveness of production and service delivery. Therefore, businesses can view eco-innovation as a unique asset that helps them stands out from competition and do better overall. Insights from the study (Oliveira Duarte et al., 2022) reveal that teamwork and co-creation are critical components of successful green marketing strategies. As a result, a firm's commitment to sustainability will enable it to implement eco-innovations that boost productivity. Implementing eco-innovation in corporate processes and systems yields several benefits, including enhanced productivity, reduced resource costs, decreased greenhouse gas emissions, elimination of toxic inputs, optimization of manufacturing processes, and mitigation of unfavourable impacts associated with the final service or product. Consequently, this phenomenon leads to an increase in entrepreneurial performance in the presence of fierce competition. This research aimed to use eco-innovation as a lens through which to examine how using green marketing strategies affects the success of businesses in Pakistan.

H_4: GMOs have a positive impact on business performance through eco-innovation.

2.4. Business Performance and Green Marketing Orientation

Increasing pressure to adopt ecologically sustainable practices and some environmental laws dramatically alter a company's operating landscape. Many companies implement green procedures that boost their productivity (Leonidou et al., 2013). The implementation of recyclable and easily decomposable packaging, the espousal of enhanced pollution prevention measures, and the pursuit of heightened energy efficiency are all illustrative examples of how a firm can include environmentally sustainable practices in its marketing endeavours (Mukonza & Swarts, 2020).A study by Chen et al. (2006) reported that organizations can benefit from investing in the innovation of green products and adopting green processes. According to the study conducted by (Hasan & Ali, 2015), using green marketing strategies has been found to enhance corporate profitability and competitive advantage while promoting the adoption of environmentally conscious purchase patterns among customers, even though enterprises are assessed according to their economic performance, which includes sales growth, financial returns, and market share. Eneizan et al. (2016) reported that implementing a GMS had a substantial positive impact on the sales volume of environmentally friendly automobiles. Total quality management is also improved with the use of green marketing tactics. In addition to opening up new avenues for profit, distribution channels, and customer niches, green marketing provides a fresh perspective on positioning existing products in the marketplace (Chen et al., 2006). Two additional studies (Wanjohi et al., 2013) and (Eneizan et al., 2016) have shown that "environmental green marketing" in the service sector is correlated with improved business outcomes.

H_5: Green marketing orientation has a significant positive impact on business performance.

2.5. The moderating role of market uncertainty.

Market uncertainty is characterized by fluctuations in the market resulting from factors such as shifting consumer tastes and unforeseen changes in market demand (Wong et al., 2011). The degree to which market participants cannot know what will happen in the market in the future. According to (Larbi-Siaw et al., 2022), the positive impact of eco-innovation in products and organizations on economic sustainability is enhanced when there is market uncertainty or turbulence, which can manifest as technological advancements, intense competition in the market, and changing consumer preferences and tastes. According to institutional theory, the way businesses react to environmental influences is influenced by market uncertainty. Although market uncertainty raises enterprises' exposure to risk and reduces their enthusiasm for implementing eco-innovation (Carter & Carter, 1998), it also magnifies the benefits of such innovation (Lin & Ho, 2011; Luo et al., 2015). Since most businesses would instead not take risks, organizations implementing eco-innovation in a very unpredictable market stand to make more money than in a regular call. It has been widely recognized that, in the face of high uncertainty, innovation as a prompt response to market changes is an effective strategy for

sustaining and expanding competitive advantage (Cohen & Levinthal, 1990; Li & Atuahene-Gima, 2002). Multiple environmental management studies have shown that while facing significant levels of market uncertainty, businesses place a premium on eco-innovation (Hofer et al., 2012; Lin & Ho, 2011; Luo et al., 2015).

H_6: Market uncertainty negatively moderates the relationship between eco-innovation and business performance.

According to recent studies, green market orientation has emerged as a critical concept in marketing management. Several studies (Chung, 2020; Papadas et al., 2017; Papadas et al., 2019) have shown that businesses with a green market orientation also have better environmental, marketing, and financial outcomes. Nonetheless, several academics have claimed that moderating forces may be at play here. One such factor, "market uncertainty", has been studied here. The importance of market uncertainty has been emphasized in the marketing and management literature. Learning how rising market uncertainty influences the connection between green market orientation and performance would be helpful.

H_7: Market uncertainty negatively moderates the relationship between GMO and business performance.

3. Methodology and research methods Information was collected from different pharmaceutical sector sources, such as small and medium enterprises and managers at varying levels (Turner & Turner, 2009), to ensure triangulation of the data. Business owners and high-ranking executives from various companies sent representatives to the event. This is because, depending on the organization's size and structure, both high- and low-level managers contribute to creating and enforcing policy. The data were gathered from July 2021 to December 2021. The questionnaires were distributed via email, the mobile messaging app WhatsApp, social media, and in-person interactions. For the data collection, convenience sampling was employed because the intended sample of middle- and upper-level managers was difficult to access due to COVID-19 constraints. A total of 900 questionnaires were disseminated across the population, 337 of which were returned, for a response rate of 37%. There were 39 patients eliminated from consideration owing to a lack of information. The following table details the questionnaires' distribution via online and in-person visits, including the number distributed, the percentage returned, and the discarded questionnaires. In other words, the number of respondents was sufficient for a structural equation modelling (SEM) technique (Kline, 2011).

Table 1. Demographic characteristics of the sample

		N	%
Gender	Male	194	65
	Female	104	35
Education	Graduation	58	19
	Master	173	58
	Technical	40	13
	Others	27	9
Age	30-35	49	16
	36-40	129	43
	41-45	67	22
	45-50	27	9
	Above 50	26	9
Job Experience	5 years or Less	73	24
	5-10 Years	148	50
	10 years or More	77	26
Job Title	Marketing Executive	88	30
	Chief Executive	51	17
	Plant Manager	69	23
	Production Planning Manager	32	11
	CEO	23	8
	Others	35	12
	Total	298	100

Sources: developed by the authors

3.1. Measures.

This study employed 40 measurement items, as documented in the available literature. Nevertheless, a few modifications were implemented in the phrasing of the items to ensure their compatibility with the

pharmaceutical sector of Pakistan. The survey employed a five-point Likert scale ranging from "1", denoting "strongly disagree", to "5", representing "strongly agree". The measuring instruments utilized in this study were documented and may be found in the Appendix.

4. Data analysis procedures. The data were analysed with the assistance of the software instrument Smart-PLS 2.0. Researchers utilized the technique of partial least squares structural equation modelling (PLS-SEM) to investigate, comprehend, and validate the causal links between several complex variables (Gudergan et al., 2008). Numerous social sciences, administrations, and industry researchers (Hair Jr et al., 2014) have already used data management techniques to enhance their data-handling capabilities. Several researchers are currently being monitored to assess the established causal connections between variables, which are grounded in theoretical frameworks and encompass intricate structures (Ali et al., 2018). This statistical method helped elucidate the underlying mechanisms of the model as a whole (Valaei et al., 2017). The investigation was carried out in two stages: first, a representation of the measurement model was presented; second, in the last stage, an evaluation of the structural model was carried out. In the context of partial least squares (PLS) analysis (Henseler et al., 2015), the heterotrait-monotrait correlation ratio (HTMT) was utilized to evaluate both the overall model fitness and the discriminant validity of the variables being analysed. In addition, following the approach suggested by (Henseler et al., 2015), the heterotrait–monotrait correlation ratio (HTMT) was utilized to evaluate both the overall model fitness and the discriminant validity of the variables being analysed. In addition, the approach suggested by (Preacher & Hayes, 2008) was utilized for the mediation analysis that was carried out because it was regarded as more appropriate for the PLS-SEM process. In several of the most recent empirical studies on green marketing, the PLS-SEM method has played a significant role (Chung, 2020).

4.1. Common Method Bias.

The analysis of common method bias was conducted with Harman's single-factor test. The study's findings revealed that the proportion of variance described by a single-factor solution was only 39.543%, which fell below the minimum requirement of 50%. This finding disproves the widespread belief that bias introduced by the research methodology compromised the study.
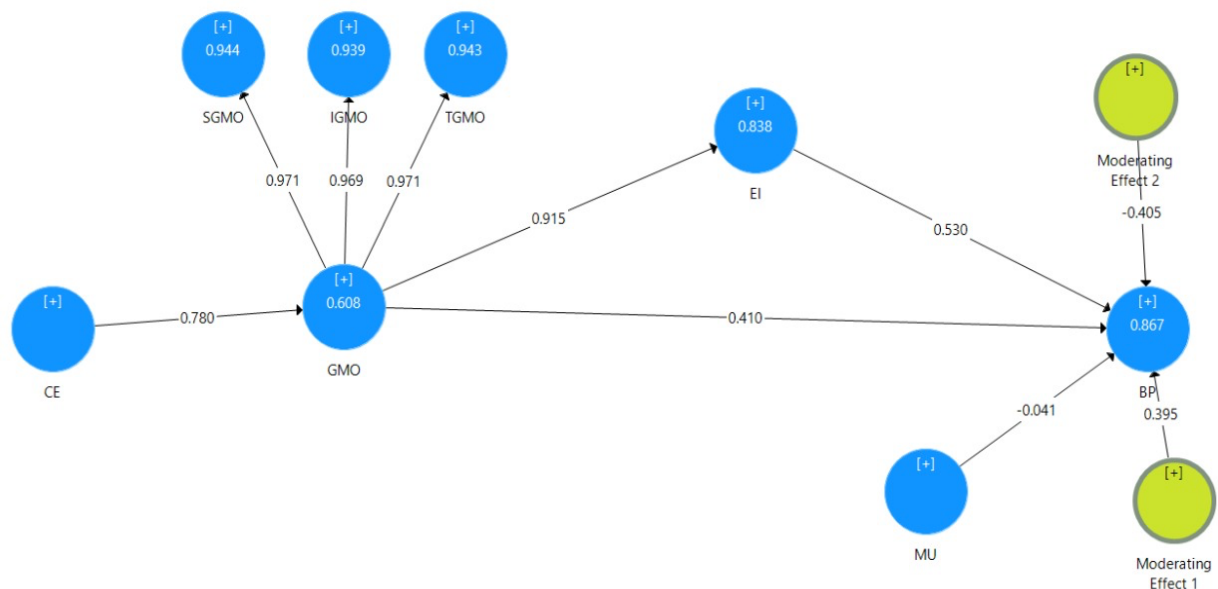
Figure 1. Structural Model Assessment
Sources: developed by the authors

4.2. Measurement Model Assessment.

A preliminary assessment of the measuring model was conducted to verify the constructs' validity and establish their dimensions (Hair Jr & Black, 2006). Since all factor loadings met or exceeded the threshold of 0.60, none of the variables were excluded from the assessment of the measurement model. Validity tests for convergent and discriminant constructs were carried out on the measuring model. To determine whether convergent validity was present, an investigation into Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) was carried out. According to the data presented in Table 2, the composite

reliability (CR) and Cronbach's alpha scores surpassed the minimum barrier of 0.70, suggesting a high level of reliability.

Table 2. Value-in-focus test, reliability test, and convergent validity test: Measurement model assessment

Construct	Item Code	Loading	A	(CR) Composite Reliability	(AVE) Average Variance Extracted
Competitive Environment	CE1	0.949	0.891	0.948	0.902
	CE2	0.951			
Strategic Green Marketing Orientation	SGMO1	0.864			
	SGMO2	0.833			
	SGMO3	0.816			
	SGMO4	0.808			
	SGMO5	0.845	0.953	0.960	0.727
	SGMO6	0.858			
	SGMO7	0.827			
	SGMO8	0.856			
	SGMO9	0.739			
Tactical Green Marketing Orientation	TGMO1	0.87			
	TGMO2	0.832			
	TGMO3	0.848	0.971	0.938	0.753
	TGMO4	0.775			
	TGMO5	0.881			
Internal Green Marketing Orientation	IGMO1	0.875			
	IGMO2	0.84			
	IGMO3	0.842			
	IGMO4	0.859	0.951	0.960	0.773
	IGMO5	0.856			
	IGMO5	0.857			
	IGMO6	0.822			
Eco-Innovation	EI1	0.870			
	EI2	0.894	0.898	0.929	0.766
	EI3	0.881			
	EI4	0.855			
Business Performance	BP1	0.844			
	BP2	0.873			
	BP3	0.841			
	BP4	0.852			
	BP5	0.876	0.954	0.961	0.733
	BP6	0.859			
	Bp7	0.868			
	BP8	0.829			
	BP9	0.862			
Market Uncertainty	MU1	0.900	0.955	0.966	0.849
	MU2	0.903			
	MU3	0.937			
	MU4	0.930			
	MU5	0.936			

Sources: developed by the authors.

In addition, the average variance extracted (AVE) was more than 0.5, which is evidence of excellent concept validity. As indicated by (Chin, 1998; Fornell & Larcker, 1981), the researchers wanted to establish discriminant validity by determining if each construct's square root of the average variance extracted (AVE) exceeded its correlation with all other constructs. This was done so that they could determine whether the constructs were genuinely discriminatory. The research findings are presented in Table 3, and those findings support the idea of strong discriminant validity.

4.3. Structural Model Assessment.

The analysis revealed R2 values of 0.867, 0.608, and 0.838 for BP, GMO, and EI, respectively, and the model was thus generally satisfactory (SRMR = 0.077; RMS-theta = 0.225). The extent to which exogenous variables contribute to endogenous R^2 values is predicted using effect values f^2 (Sarstedt et al., 2014), provided that R^2 is greater than the minimum value of 0.10 (Falk & Miller, 1992). In the present study, CE predicts GMOs, EI predicts GMOs, and BP predicts EI and GMOs. In the next stage, the performance of the measurement model will be assessed. This hypothesis was tested. First, how CE indirectly affects GMOs was investigated. Second, the immediate effects of GMO and BP are quantified. Then, we test the direct influence of GMOs on EI and BP. Later, 5000 resamples were taken using a bootstrap method to examine the relevance of direct links (Ringle, 2005). The findings of the tests of the hypothesis for direct relationships are as follows.

Table 3. Discriminant validity

	BP	CE	EI	GMO	IGMO	MU	SGMO	TGMO
BP	0.856							
CE	0.629	0.950						
EI	0.907	0.685	0.875					
GMO	0.847	0.780	0.915	0.839				
IGMO	0.792	0.748	0.876	0.969	0.879			
MU	0.571	0.549	0.673	0.739	0.768	0.921		
SGMO	0.836	0.781	0.883	0.971	0.894	0.685	0.853	
TGMO	0.835	0.728	0.911	0.971	0.937	0.706	0.912	0.868

Notes: BP = business performance, CE = competitive environment, EI = eco-innovation, GMO = green marketing orientation, IGMO = internal green marketing orientation, MU = market uncertainty, SGMO = strategic green marketing orientation, TGMO = tactical green marketing orientation
Sources: developed by the authors.

According to hypothesis 1, a competitive environment is favourably associated with a green marketing orientation. A highly substantial positive correlation was found between a competitive environment and green marketing attitudes (β = 0.780, p < 0.001). As a result, H1 was accepted. It was hypothesized in the second hypothesis that an emphasis on green marketing would lead to an increase in eco-innovation. The expected positive relationship between GMO and EI was found (β = 0.915, p < 0.001). Therefore, the second hypothesis was confirmed. In support of Hypothesis 3, eco-innovation has a favourable effect on company performance (β = 0.530, p < 0.001). GMOs were also found to substantially affect company performance (β = 0.410, p < 0.001), lending credence to H5. Finally, utilizing mediation assessment, the indirect effect of GMO on BP through EI was examined.

Table 4. Hypothesis testing: direct relationships

	Relationship	β	SD	t value	p value	Decision
H1	CE--------GMO	0.78	0.033	23.98	0.000	Accepted
H2	GMO-----EI	0.915	0.082	59.65	0.000	Accepted
H3	EI---------BP	0.53	0.076	7.034	0.000	Accepted
H5	GMO-----BP	0.41	0.015	4.909	0.000	Accepted

Sources: developed by the authors.

Table 5. Coefficient of determination (R^2)

Exogenous Construct	R^2		f^2
Business Performance	0.867	**CE-->GMO**	1.554
Eco Innovation	0.838	**GMO-EI**	5.195
Green Marketing Orientation	0.608	**EI-BP**	0.255
		GM0-BP	0.13

Sources: developed by the authors

4.4. Mediation.

Like (Preacher & Hayes, 2008), a parallel multiple mediator analysis was conducted to examine the mediating impact of Hypothesis 4 by contrasting the findings with and without the mediators. Parameter bias caused by missing data was mitigated using this approach (Preacher & Hayes, 2008). Hypothesis 4 was tested to determine whether eco-innovation mediates the relation between GMOs and BP. Incorporating the mediator into the model led to a positive but non-significant direct effect (β = 0.410, p < 0.001) and a positive and

significant indirect effect (β = 0.485, p 0.001). The findings, therefore, revealed partial mediation. From this, it was deduced that eco-innovation partially affects the relationship between GMO and business performance. As a result, the null hypothesis (H4) was accepted. Table 6 displays the outcomes of the mediated discussion.

Table 6. Mediated Discussion

Total Effects (GMO --> BP)		Direct Effect (GMO --> BP)		Indirect Effects of GMO --> BP			
Coefficient	P -value	Coefficient	P- value	Coefficient	SD	t -value	P- value
0.859	0.00	0.41	0.00	0.485	4.909	0.082	0.00

Sources: developed by the authors.

4.5. Moderation.

As shown in Fig. 2, market uncertainty negatively moderates eco-innovation on business performance (β = −0.405; p < 0.001), lending credence to H6. However, it positively moderates the impact of green marketing orientation on business performance (β = 0.395; p <0.001). As a result, H7 was accepted.
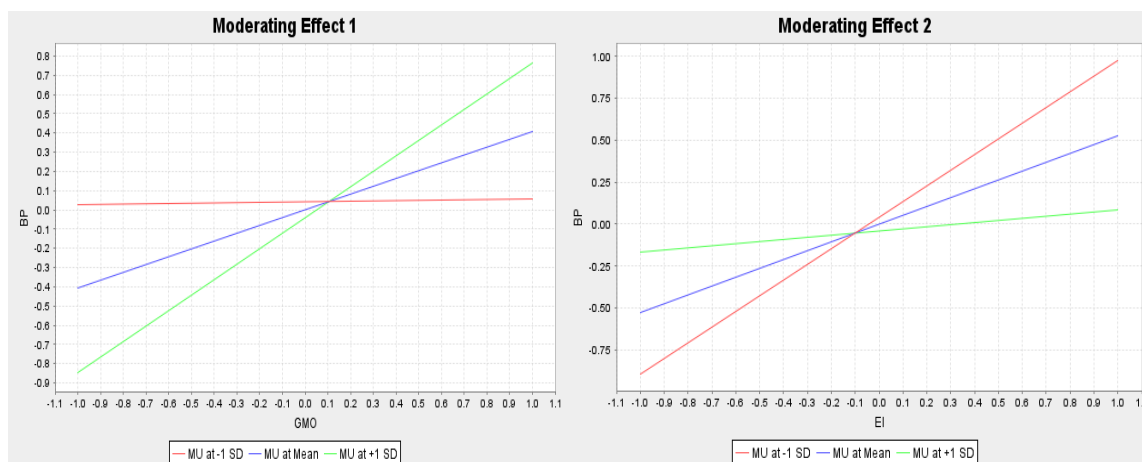

Figure 2. Moderation effects
Sources: developed by the authors

5. Discussion. Due to the growing awareness of the importance of this issue, companies are under the influence of the government, customers, and competitors to maximize profits while reducing their adverse effects on the environment. The research suggests that the pharmaceutical industry in Pakistan can strengthen its competitive standing by embracing eco-innovation to address the increasing regulatory burden it faces. The present study contributes significantly to the current corpus of knowledge in environmental management through the presentation and empirical validation of a framework grounded in known theories. The significance causes, and effects of a green market orientation are the main points of this paradigm. The implications of the study's findings have substantial importance for professionals and politicians, particularly in the context of the urgent matter of climate change. The research conducted has both theoretical and practical implications.

This study underwrites the extant literature on green marketing, institutional theory, the NRBV, and market uncertainty. The initial step involves examining the theoretical foundation established by integrating green marketing theory and the NRBV. This amalgamation is a robust framework for comprehending the underlying motivations that drive organizations to engage in eco-innovation. Institutional theory states that organizations are forced to adopt eco-innovation due to increasing institutional limitations on environmental issues (Berrone et al., 2013). On the other hand, the NRBV posits that eco-innovation, considered a strategic green capability, is crucial for enterprises to successfully engage in environmentally friendly competition. This is achieved by mitigating environmental impacts and improving organizational performance, as supported by (Hart, 1995) and (Chen et al., 2006; van der Linde, 1995). Integrating the two is helpful for better explaining why businesses choose to implement green innovation, as the former emphasizes social motivation, and the latter emphasizes internal incentives or necessity. This research reveals that the Pakistani pharmaceutical industry prioritizes green innovation not only because doing so is the right thing to do in light of growing international

pressure to lessen its effect on the environment but also because it is essential to its pursuit of competitive advantages.

Second, the results of this research unequivocally show that the competitive environment plays an essential role in shaping how a company becomes green market oriented. As a result, management should consider the firm's competitors carefully whenever possible. In today's cutthroat global market, more resources are needed to compete solely on price and quality; thus, offering a sustainable option is necessary. Because of this new understanding, several companies have re-examined their environmental management strategies. The expectation was that the environmental standards of customers would serve as a substantial catalyst for firms' implementation of green initiatives. In light of this, managers need to acknowledge the significance of competition, embrace ecologically sustainable initiatives, and create and promote goods and services that customers value to eventually achieve a competitive advantage.

Third, the analysis accounts for the moderating effect of market volatility, which may help explain the contradictory findings of prior research. The results show that market uncertainty mitigates the driving impact of eco-innovation on business performance and mediates the relationship between green marketing approaches. Some fundamental causes could be at play. First, industries tend to be cautious when utilizing eco-innovation in reaction to external pressure since market uncertainty increases the risk of eco-innovation. According to (Dimaggio & W. Powell, 1983), institutional theory posits that delay serves as a powerful catalyst for imitation. This implies that heightened uncertainty amplifies the influence of competitive pressure. Significantly, this discovery can shed light on the reasons behind the divergent findings of previous studies about the effects of customer demand on eco-innovation, which have been attributed to the various levels of market uncertainty that businesses encounter.

Fourth, this study provides evidence that eco-innovation enhances performance, advancing the knowledge in the NRBV literature. Furthermore, this research contributes to the existing body of knowledge on the NRBV proposed by (van der Linde, 1995) by providing evidence that the advantages of eco-innovation are contingent upon market instability. This finding contributes to resolving inconsistencies in the existing body of research. The usefulness of eco-innovation is contingent upon particular circumstances and criteria that require further elucidation. Finally, the study conducted in the Pakistan Pharmaceutical Industry contributes to the existing knowledge of green marketing, innovation, and industry. Numerous scholarly publications have underscored the importance of eco-innovation and other environmentally friendly practices and innovative sectors (Lin & Ho, 2011; Rossi et al., 2013). There is concrete evidence that eco-innovation improves company results. These findings are consistent with those of (Abbas & Hassan, 2017; de Oliveira et al., 2018; Hamelink & Opdenakker, 2019). According to (Thomas Anning-Dorson, 2016), innovation is both a competitive advantage and a profit booster for businesses (Hadjimanolis & Dickson, 2000). A company's ability to innovate, mainly in response to consumer needs and wants, is crucial to its success in the cutthroat pharmaceutical market. Even more importantly, (Lin & Ho, 2011)this research adds to the eco-innovation field because enterprises in various sectors may respond inversely to environmental challenges.

The results showed that a competitive environment and pressure can spur creativity. In other words, these findings support the results of prior studies (Distanont & Khongmalai, 2020). Companies unable to adjust to the market will be forced to close their doors. Companies will be prompted to innovate in response to market pressures, including new product or service development, enhanced production methods, and the incorporation of cutting-edge technology and applications (Distanont & Khongmalai, 2020). Due to this invention, there will be a significant increase in competitive advantage (Chiu & Yang, 2019), allowing the company to outperform its rivals in the market and increase its profitability.

This research contributes to the literature on green marketing by investigating the subject of GMOs in Pakistani pharmaceutical business. Using GMOs, executives may learn more about the positive effects of green practices on their bottom line. As a result, organizational effectiveness will increase. Evaluating the construct's influence on various endogenous variables and soliciting greater cooperation from government agencies and university marketing specialists, GMOs and their variables may pave the way for future theoretical advancements. Policymakers' implications are also included in this study. The government is crucial in encouraging businesses to develop new products and processes to prevent pollution. Poor government environmental policy harms competitiveness; whereas an excellent ecological approach can help firms improve their environmental management by encouraging and instructing them in the proper ways to do so. Therefore, policymakers should understand the significance of a well-developed environmental policy and create eco-friendly legislation that promotes pollution prevention innovations. Second, managers may wait to implement green practices since they realize that doing so typically requires additional resource inputs and may only sometimes translate into economic objectives. Corporations should be compensated for their

green efforts. Thus, policymakers should consider effective incentive programs (such as subsidies and favourable tax policies) to support green projects within corporations. Environmentally friendly activities and eco-innovation are good for businesses, so it makes sense to include them in official company evaluation systems to encourage them.

The study's reliance on managers' perceptions is a significant caveat. In particular, their opinions were used to evaluate the effectiveness of the marketing strategies. Instead, future research should focus on what customers think. (Alsheikh, 2020) discovered that companies with a culture that encourages and rewards innovation had a higher success rate. Future research could benefit from including corporate culture as a mediator variable between green marketing techniques and marketing performance. Thus, it is essential to investigate the connections between facets of eco-many innovation and the effectiveness of various strategic approaches. This study focused mainly on cross-sectional data, but longitudinal research could broaden its applicability. Thus, a new study could use this method to compare businesses (manufacturing versus services industry, local versus multinational). Due to the study's focus on Pakistan, a developing country, additional research using this model is warranted in other industrialized nations to determine whether there is any meaningful difference in findings.

Author Contributions: Conceptualization of the theoretical framework: F. S. and H. M. F. Z.; literature review and methodology: F. S and T. T. N. N.; data collection: F. S., T. T. N. N. and P. S.; formal analysis: F. S. and T. T. N. N.; writing-final draft: F. S. and P. S.; supervision: H. M. F. Z.; writing review and editing: H. M. F. Z., T. T. N. N. and P. S.

Conflicts of interest: The authors declare no conflicts of interest.

Data availability statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all the subjects involved in the study.

References

Abbas, M. W., & Ul Hassan, M. (2017). Moderating impact of environmental turbulence on business innovation and business performance. *Pakistan Journal of Commerce Social Sciences*, *11*(2), 576-596. [Google Scholar] [CrossRef]

Ahmad, M., Jiang, P., Murshed, M., Shehzad, K., Akram, R., Cui, L., & Khan, Z. (2021). Modelling the dynamic linkages between eco-innovation, urbanization, economic growth and ecological footprints for G7 countries: does financial globalization matter? *Sustainable Cities Society*, *70*, 102881. [Google Scholar] [CrossRef]

Ahmad, R., Ahmad, M. J., Farhan, M., & Arshad, M. A. (2020). The Relationship within Green Marketing Strategies and Market Performance of Pakistan SME's. *Hamdard Islamicus*, *43*(2), 204-216. [Google Scholar]

Albino, V., Balice, A., & Dangelico, R. M. (2009). Environmental strategies and green product development: an overview on sustainability-driven companies. *Business Strategy and the Environment*, *18*(2), 83-96. [Google Scholar] [CrossRef]

Albort-Morant, G., Leal-Millán, A., & Cepeda-Carrión, G. (2016). The antecedents of green innovation performance: A model of learning and capabilities. *Journal of Business Research*, *69*(11), 4912-4917. [Google Scholar] [CrossRef]

Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modelling (PLS-SEM) in hospitality research. *International journal of contemporary hospitality management*, *30*(1), 514-538. [Google Scholar] [CrossRef]

Alsheikh, L. H. (2020). The Impact of Green Marketing Strategies on Marketing Performance of Small and Medium-Sized Restaurants in Saudi Arabia. *TEST Engineering & Management*, *83*, 10084-10091. [Google Scholar]

Amegbe, H., Owino, J. O., & Nuwasiima, A. (2017). Green marketing orientation (GMO) and performance of SMEs in Ghana. *American Journal of Management*, *11*(1). [Google Scholar]

Andersen, M. M. (2010). On the faces and phases of eco-innovation–on the dynamics of the greening of the economy. In *DRUID Summer conference* (pp. 16-18). London Business School. [Google Scholar]

Anning-Dorson, T. (2016). Interactivity innovations, competitive intensity, customer demand and performance. *International Journal of Quality and Service Sciences*, *4*(8), 536-554. [Google Scholar] [CrossRef]

Ar, I. M. (2012). The impact of green product innovation on firm performance and competitive capability: the moderating role of managerial environmental concern. *Procedia-Social Behavioral Sciences*, *62*, 854-864. [Google Scholar] [CrossRef]

Aragón-Correa, J. A., Hurtado-Torres, N., Sharma, S., & García-Morales, V. J. (2008). Environmental strategy and performance in small firms: A resource-based perspective. *Journal of environmental management*, *86*(1), 88-103. [Google Scholar] [CrossRef]

Arici, H. E., & Uysal, M. (2022). Leadership, green innovation, and green creativity: A systematic review. *The Service Industries Journal*, *42*(5-6), 280-320. [Google Scholar] [CrossRef]

Baker, W. E., & Sinkula, J. M. (2005). Market orientation and the new product paradox. *Journal of product innovation management*, *22*(6), 483-502. [Google Scholar] [CrossRef]

Banerjee, S. B., Iyer, E. S., & Kashyap, R. K. (2003). Corporate environmentalism: Antecedents and influence of industry type. *Journal of Marketing*, *67*(2), 106-122. [Google Scholar] [CrossRef]

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120. [Google Scholar] [CrossRef]

Bathmathan, V., & Rajadurai, J. (2019). Green marketing mix strategy using modified measurement scales–a performance on Gen Y green purchasing decision in Malaysia. *International Journal of Engineering and Advanced Technology*, *9*(1)б 3612-3618. [Google Scholar] [CrossRef]

Berrone, P., Fosfuri, A., Gelabert, L., & Gomez-Mejia, L. R. (2013). Necessity as the mother of 'green'inventions: Institutional pressures and environmental innovations. *Strategic Management Journal*, *34*(8), 891-909. [Google Scholar] [CrossRef]

Bitencourt, C. C., de Oliveira Santini, F., Zanandrea, G., Froehlich, C., & Ladeira, W. J. (2020). Empirical generalizations in eco-innovation: A meta-analytic approach. *Journal of Cleaner Production*, *245*, 118721. [Google Scholar] [CrossRef]

Borsatto, J. M. L. S., & Bazani, C. L. (2021). Green innovation and environmental regulations: A systematic review of international academic works. *Environmental Science and Pollution Research*, *28*(45), 63751-63768. [Google Scholar] [CrossRef]

Bossle, M. B., Dutra de Barcellos, M., Vieira, L. M., & Sauvée, L. (2016). The drivers for adoption of eco-innovation. *Journal of Cleaner Production*, *113*, 861-872. [Google Scholar] [CrossRef]

Cai, W.-g., & Zhou, X.-l. (2014). On the drivers of eco-innovation: empirical evidence from China. *Journal of Cleaner Production*, *79*, 239-248. [Google Scholar] [CrossRef]

Cainelli, G., De Marchi, V., & Grandinetti, R. (2015). Does the development of environmental innovation require different resources? Evidence from Spanish manufacturing firms. *Journal of Cleaner Production*, *94*, 211-220. [Google Scholar] [CrossRef]

Cao, Q., Baker, J., & Hoffman, J. J. (2012). The role of the competitive environment in studies of strategic alignment: a meta-analysis. *International Journal of Production Research*, *50*(2), 567-580. [Google Scholar] [CrossRef]

Carbone, V., & Moatti, V. (2011). Towards greener supply chains: an institutional perspective. *International Journal of Logistics Research Applications*, *14*(3), 179-197. [Google Scholar] [CrossRef]

Carter, C. R., & Carter, J. R. (1998). Interorganizational determinants of environmental purchasing: initial evidence from the consumer products industries. *Decision Sciences*, *29*(3), 659-684. [Google Scholar] [CrossRef]

Ch'ng, P.-C., Cheah, J., & Amran, A. (2021). Eco-innovation practices and sustainable business performance: The moderating effect of market turbulence in the Malaysian technology industry. *Journal of Cleaner Production*, *283*, 124556. [Google Scholar] [CrossRef]

Chahal, H., Dangwal, R., & Raina, S. (2014). Conceptualization, development and validation of green marketing orientation (GMO) of SMEs in India: A case of electric sector. *Journal of Global Responsibility*, *5*, 312-337. [Google Scholar] [CrossRef]

Chamorro, A., & Bañegil, T. M. (2006). Green marketing philosophy: a study of Spanish firms with ecolabels. *Corporate Social Responsibility Environmental Management13*(1), 11-24. [Google Scholar] [CrossRef]

Chang, C.-H. (2011). The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation. *Journal of Business Ethics*, *104*(3), 361-370. [Google Scholar] [CrossRef]

Chang, C. H. (2016). The determinants of green product innovation performance. *Corporate Social Responsibility and Environmental Management*, *23*(2), 65-76. [Google Scholar] [CrossRef]

Charter, M., & Polonsky, M. J. (Eds.). (2017). *Greener marketing: a global perspective on greening marketing practice*. Routledge. [Google Scholar]

Chen, C. (2001). Design for the environment: A quality-based model for green product development. *Managment Science*, *47*(2), 250-263. [Google Scholar] [CrossRef]

Chen, Y.-S., Lai, S.-B., & Wen, C.-T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of business ethics*, *67*(4), 331-339. [Google Scholar] [CrossRef]

Chen, Y., Tang, G., Jin, J., Li, J., & Paillé, P. (2015). Linking market orientation and environmental performance: The influence of environmental strategy, employee's environmental involvement, and environmental product quality. *Journal of Business Ethics*, *127*(2), 479-500. [Google Scholar] [CrossRef]

Cheng, C. C., & Krumwiede, D. (2012). The role of service innovation in the market orientation—new service performance linkage. *Technovation, 32*(7-8), 487-497. [Google Scholar] [CrossRef]

Cheng, C. C., Yang, C.-l., & Sheu, C. (2014). The link between eco-innovation and business performance: A Taiwanese industry context. *Journal of Cleaner Production*, *64*, 81-90. [Google Scholar] [CrossRef]

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modelling. *MIS quarterly*, vii-xvi. [Google Scholar]

Chiu, C.-N., & Yang, C.-L. (2019). Competitive advantage and simultaneous mutual influences between information technology adoption and service innovation: Moderating effects of environmental factors. *Structural Change and Economic Dynamics*, *49*, 192-205. [Google Scholar] [CrossRef]

Choudhury, D., Rao, V. G., & Mishra, M. K. (2019). Impact of strategic and tactical green marketing orientation on SMEs performance. *Theoretical Economics letters*, *9*, 1633-1650. [Google Scholar]

Chu, Z., Wang, L., & Lai, F. (2019). Customer pressure and green innovations at third party logistics providers in China. *The International Journal of Logistics Management*, *30*(1), 57-75. [Google Scholar] [CrossRef]

Chung, K. C. (2020). Green marketing orientation: Achieving sustainable development in green hotel management. *Journal of Hospitality Marketing Management*, *29*(6), 722-738. [Google Scholar] [CrossRef]

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152. [Google Scholar] [CrossRef]

Cornejo-Cañamares, M., Medrano, N., & Olarte-Pascual, C. (2021). Environmental objectives and nontechnological innovation in Spanish manufacturing SMEs. *Journal of Cleaner Production*, *296*, 126445. [Google Scholar] [CrossRef]

Crittenden, V. L., Crittenden, W. F., Ferrell, L. K., Ferrell, O., & Pinney, C. C. (2011). Market-oriented sustainability: a conceptual framework and propositions. *Journal of the academy of marketing science*, *39*(1), 71-85. [Google Scholar] [CrossRef]

Cronin, J. J., Smith, J. S., Gleim, M. R., Ramirez, E., & Martinez, J. D. (2011). Green marketing strategies: an examination of stakeholders and the opportunities they present. *Journal of the Academy of Marketing Science*, *39*(1), 158-174. [Google Scholar] [CrossRef]

D'Attoma, I., & Ieva, M. (2022). The role of marketing strategies in achieving the environmental benefits of innovation. *Journal of Cleaner Production*, *342*, 130957. [Google Scholar] [CrossRef]

Dangelico, R. M., Pujari, D., & Pontrandolfo, P. (2017). Green product innovation in manufacturing firms: A sustainability-oriented dynamic capability perspective. *Business strategy and the Environment*, *26*(4), 490-506. [Google Scholar] [CrossRef]

De Marchi, V. (2012). Environmental innovation and R&D cooperation: Empirical evidence from Spanish manufacturing firms. *Research policy*, *41*(3), 614-623. [Google Scholar] [CrossRef]

de Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2014). Success factors for environmentally sustainable product innovation: a systematic literature review. *Journal of Cleaner Production*, *65*, 76-86. [Google Scholar] [CrossRef]

de Oliveira, J. A. S., Basso, L. F. C., Kimura, H., & Sobreiro, V. A. (2018). Innovation and financial performance of companies doing business in Brazil. *International Journal of Innovation Studies*, *2*(4), 153-164. [Google Scholar] [CrossRef]

Dimaggio, P., & W. Powell. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*, 147-160. [Google Scholar] [CrossRef]

Distanont, A., & Khongmalai, O. (2020). The role of innovation in creating a competitive advantage. *Kasetsart Journal of Social Sciences*, *41*(1), 15-21. [Google Scholar]

Dolan, P. (2002). The sustainability of sustainable consumption. *Journal of Macromarketing*, *22*(2), 170-181. [Google Scholar] [CrossRef]

Eneizan, B., Abd Wahab, K., & Obaid, T. (2016). Effects of green marketing strategies on sales volume of green cars. *Singaporean Journal of Business, Economics Management Studies*, *51*(3814), 1-14. [Google Scholar]

Evans, S., Vladimirova, D., Holgado, M., Van Fossen, K., Yang, M., Silva, E. A., & Barlow, C. Y. (2017). Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models. *Business Strategy and the Environment*, *26*(5), 597-608. [Google Scholar] [CrossRef]

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modelling*. University of Akron Press. [Google Scholar]

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50. [Google Scholar] [CrossRef]

Fraj, E., Martínez, E., & Matute, J. (2011). Green marketing strategy and the firm's performance: the moderating role of environmental culture. *Journal of Strategic Marketing*, *19*(4), 339-355. [Google Scholar] [CrossRef]

Fraj, E., Martínez, E., & Matute, J. (2013). Green marketing in B2B organizations: an empirical analysis from the natural-resource-based view of the firm. *Journal of Business & Industrial Marketing*, *28*(5), 396-410. [Google Scholar] [CrossRef]

Galbreath, J., Chang, C.-Y., & Tisch, D. (2021). Are exporting firms linked to cleaner production? A study of eco-innovation in Taiwan. *Journal of Cleaner Production*, *303*, 127029. [Google Scholar] [CrossRef]

Galdeano-Gómez, E., Aznar-Sánchez, J. A., & Pérez-Mesa, J. C. (2013). Sustainability dimensions related to agricultural-based development: the experience of 50 years of intensive farming in Almería (Spain). *International Journal of Agricultural Sustainability*, *11*(2), 125-143. [Google Scholar] [CrossRef]

García-Granero, E. M., Piedra-Muñoz, L., & Galdeano-Gómez, E. (2020). Measuring eco-innovation dimensions: The role of environmental corporate culture and commercial orientation. *Research Policy*, *49*(8), 104028. [Google Scholar] [CrossRef]

Geng, D., Lai, K.-h., & Zhu, Q. (2021). Eco-innovation and its role for performance improvement among Chinese small and medium-sized manufacturing enterprises. *International Journal of Production Economics*, *231*, 107869. [Google Scholar] [CrossRef]

Ghisetti, C., & Pontoni, F. (2015). Investigating policy and R&D effects on environmental innovation: A meta-analysis. *Ecological Economics*, *118*, 57-66. [Google Scholar] [CrossRef]

Gomes, C. F., Najjar, M., & Yasin, M. M. (2018). Exploring competitive strategic performance consistency in service organizations. *Measuring Business Excellence*. [Google Scholar] [CrossRef]

Gordon, R., Carrigan, M., & Hastings, G. (2011). A framework for sustainable marketing. *Marketing Theory*, *11*(2), 143-163. [Google Scholar] [CrossRef]

Graci, S., & Dodds, R. (2008). Why go green? The business case for environmental commitment in the Canadian hotel industry. *Anatolia*, *19*(2), 251-270. [Google Scholar] [CrossRef]

Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modelling. *Journal of business research*, *61*(12), 1238-1249. [Google Scholar] [CrossRef]

Guoyou, Q., Saixing, Z., Chiming, T., Haitao, Y., & Hailiang, Z. (2013). Stakeholders' influences on corporate green innovation strategy: a case study of manufacturing firms in China. *Corporate Social Responsibility and Environmental Management, 20*(1), 1-14.[Google Scholar] [CrossRef]

Hadjimanolis, A., & Dickson, K. (2000). Innovation strategies of SMEs in Cyprus, a small developing country. *International Small Business Journal*, *18*(4), 62-79. [Google Scholar] [CrossRef]

Hair, J. F., & Black, W. C. (2006). Babin BJ. Anderson RE, Tatham RL. Multivariate Data Analysis. [Google Scholar]

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modelling (PLS-SEM): An emerging tool in business research. *European Business Review*. [Google Scholar] [CrossRef]

Hamelink, M., & Opdenakker, R. (2019). How business model innovation affects firm performance in the energy storage market. *Renewable energy*, *131*, 120-127. [Google Scholar] [CrossRef]

Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, *20*(4), 986-1014. [Google Scholar] [CrossRef]

Hart, S. L., & Dowell, G. (2011). Invited editorial: A natural-resource-based view of the firm: Fifteen years after. *Journal of management*, *37*(5), 1464-1479. [Google Scholar] [CrossRef]

Hasan, Z., & Ali, N. A. (2015). The impact of green marketing strategy on the firm's performance in Malaysia. *Procedia-Social Behavioral Sciences*, *172*, 463-470. [Google Scholar] [CrossRef]

Helfat, C. E. (1994). Evolutionary trajectories in petroleum firm R&D. *Management science*, *40*(12), 1720-1747. [Google Scholar] [CrossRef]

Hellström, T. J. S. d. (2007). Dimensions of environmentally sustainable innovation: the structure of eco-innovation concepts. *15*(3), 148-159. [Google Scholar] [CrossRef]

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the academy of marketing science*, *43*(1), 115-135. [Google Scholar] [CrossRef]

Hofer, C., Cantor, D. E., & Dai, J. (2012). The competitive determinants of a firm's environmental management activities: Evidence from US manufacturing industries. *Journal of Operations management*, *30*(1-2), 69-84. [Google Scholar] [CrossRef]

Hojnik, J., & Ruzzier, M. (2016). What drives eco-innovation? A review of an emerging literature. *Environmental Innovation and Societal Transitions*, *19*, 31-41. [Google Scholar] [CrossRef]

Huang, X.-x., Hu, Z.-p., Liu, C.-s., Yu, D.-j., & Yu, L.-f. (2016). The relationships between regulatory and customer pressure, green organizational responses, and green innovation performance. *Journal of Cleaner Production*, *112*, 3423-3433. [Google Scholar] [CrossRef]

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences. *Journal of Marketing*, *57*(3), 53-70. [Google Scholar] [CrossRef]

Jia, X., Alvi, A. K., Nadeem, M. A., Akhtar, N., & Zaman, H. M. F. (2022). Impact of Perceived Influence, Virtual Interactivity on Consumer Purchase Intentions Through the Path of Brand Image and Brand Expected Value. *Frontiers in Psychology*, *13*. [Google Scholar] [CrossRef]

Johansson, G. (2002). Success factors for integration of ecodesign in product development: a review of state of the art. *Environmental management and health*, *13*(1), 98-107. [Google Scholar] [CrossRef]

Juwaheer, D. T., Pudaruth, S., & Monique Emmanuelle Noyaux, M. (2012). Analysing the impact of green marketing strategies on consumer purchasing patterns in Mauritius. *World Journal of Entrepreneurship, Management and Sustainable Development*, *8*(1), 36-59. [Google Scholar] [CrossRef]

Karakaya, E., Hidalgo, A., & Nuur, C. (2014). Diffusion of eco-innovations: A review. *Renewable and Sustainable Energy Reviews*, *33*, 392-399. [Google Scholar] [CrossRef]

Keijzers, G. J. J. o. c. p. (2002). The transition to the sustainable enterprise. *Journal of Cleaner Production*, *10*(4), 349-359. [Google Scholar] [CrossRef]

Ketchen Jr, D. J., Hult, G. T. M., & Slater, S. F. (2007). Toward greater understanding of market orientation and the resource-based view. *Strategic management journal*, *28*(9), 961-964. [Google Scholar] [CrossRef]

Kilbourne, W. E., Beckmann, S. C., & Thelen, E. (2002). The role of the dominant social paradigm in environmental attitudes: A multinational examination. *Journal of Business Research*, *55*(3), 193-204. [Google Scholar] [CrossRef]

Kinoti, M. W. (2016). Influence of Green Marketing Practices and Corporate image on Performance of ISO 9000 and 14000 Series Certified Firms in Kenya. *Operations Research Society of Eastern Africa*, *6*(1), 71-116. [Google Scholar]

Kline, R. B. (2011). Convergence of structural equation modelling and multilevel modelling. *The SAGE handbook of innovation in social research methods*, 562-589. [Google Scholar]

Kuo, T.-C., & Smith, S. (2018). A systematic review of technologies involving eco-innovation for enterprises moving towards sustainability. *Journal of Cleaner Production*, *192*, 207-220. [Google Scholar] [CrossRef]

Larbi-Siaw, O., Xuhua, H., Owusu, E., Owusu-Agyeman, A., Fulgence, B. E., & Frimpong, S. A. (2022). Eco-innovation, sustainable business performance and market turbulence moderation in emerging economies. *Technology in Society*, *68*, 101899. [Google Scholar] [CrossRef]

Lee, K.-H., & Min, B. (2015). Green R&D for eco-innovation and its impact on carbon emissions and firm performance. *Journal of Cleaner Production*, *108*, 534-542. [Google Scholar] [CrossRef]

Leonidou, C. N., Katsikeas, C. S., & Morgan, N. A. (2013). "Greening" the marketing mix: Do firms do it and does it pay off? *Journal of the Academy of Marketing Science*, *41*(2), 151-170. [Google Scholar] [CrossRef]

Leonidou, C. N., & Leonidou, L. C. (2011). Research into environmental marketing/management: a bibliographic analysis. *European Journal of Marketing*, *45*(1/2), 68-103. [Google Scholar] [CrossRef]

Levidow, L., Lindgaard-Jørgensen, P., Nilsson, Å., Skenhall, S. A., & Assimacopoulos, D. (2016). Process eco-innovation: assessing meso-level eco-efficiency in industrial water-service systems. *Journal of Cleaner Production*, *110*, 54-65. [Google Scholar] [CrossRef]

Li, H., & Atuahene-Gima, K. (2002). The adoption of agency business activity, product innovation, and performance in Chinese technology ventures. *Strategic Management Journal*, *23*(6), 469-490. [Google Scholar] [CrossRef]

Li, Y., Ye, F., Sheu, C., & Yang, Q. (2018). Linking green market orientation and performance: Antecedents and processes. *Journal of Cleaner Production*, *192*, 924-931. [Google Scholar] [CrossRef]

Lin, C.-Y., & Ho, Y.-H. (2011). Determinants of green practice adoption for logistics companies in China. *Journal of business ethics*, *98*(1), 67-83. [Google Scholar] [CrossRef]

Liu, W., & Atuahene-Gima, K. (2018). Enhancing product innovation performance in a dysfunctional competitive environment: The roles of competitive strategies and market-based assets. *Industrial Marketing Management*, *73*, 7-20. [Google Scholar] [CrossRef]

Liu, Y., Zhu, J., Li, E. Y., Meng, Z., & Song, Y. (2020). Environmental regulation, green technological innovation, and eco-efficiency: The case of Yangtze river economic belt in China. *Technological Forecasting and Social Change*, *155*, 119993. [Google Scholar] [CrossRef]

Lopes, C. M., Scavarda, A., Hofmeister, L. F., Thomé, A. M. T., & Vaccaro, G. L. R. (2017). An analysis of the interplay between organizational sustainability, knowledge management, and open innovation. *Journal of Cleaner Production*, *142*, 476-488. [Google Scholar] [CrossRef]

Lu, J., Liang, M., Zhang, C., Rong, D., Guan, H., Mazeikaite, K., & Streimikis, J. (2021). Assessment of corporate social responsibility by addressing sustainable development goals. *Corporate Social Responsibility and Environmental Management*, *28*(2), 686-703. [Google Scholar] [CrossRef]

Luo, J., Chong, A. Y.-L., Ngai, E. W., & Liu, M. (2015). Reprint of "Green Supply Chain Collaboration implementation in China: The mediating role of guanxi". *Transportation Research Part E: Logistics Transportation Review*, *74*, 37-49. [Google Scholar] [CrossRef]

Matusik, S. F., & Hill, C. W. (1998). The utilization of contingent work, knowledge creation, and competitive advantage. *Academy of management review*, *23*(4), 680-697. [Google Scholar] [CrossRef]

McDaniel, S. W., & Rylander, D. H. (1993). Strategic green marketing. *Journal of consumer marketing*, *10*(3), 4-10. [Google Scholar] [CrossRef]

McDonagh, P., & Prothero, A. (2014). Sustainability marketing research: Past, present and future. *Journal of Marketing Management*, *30*(11-12), 1186-1219. [Google Scholar] [CrossRef]

Mei, O. J., Ling, K. C., & Piew, T. H. (2012). The antecedents of green purchase intention among Malaysian consumers. *Asian Social Science*, *8*(13), 248. [Google Scholar] [CrossRef]

Miller, D. (1987). The structural and environmental correlates of business strategy. *Strategic management journal*, *8*(1), 55-76. [Google Scholar] [CrossRef]

Mourad, M., & Ahmed, Y. (2012). Perception of green brand in an emerging innovative market. *European Journal of Innovation Management*, *15*, 514-537. [Google Scholar] [CrossRef]

Mukonza, C., & Swarts, I. (2020). The influence of green marketing strategies on business performance and corporate image in the retail sector. *Business strategy and the Environment*, *29*(3), 838-845. [Google Scholar] [CrossRef]

Oliveira Duarte, L., Vasques, R. A., Fonseca Filho, H., Baruque-Ramos, J., & Nakano, D. (2022). From fashion to farm: Green marketing innovation strategies in the Brazilian organic cotton ecosystem. *Journal of Cleaner Production*, *360*, 132196. [Google Scholar] [CrossRef]

Ottman, J., & Books, N. (1998). Green marketing: opportunity for innovation. *The Journal of Sustainable Product Design*, *60*(7), 136-667. [Google Scholar]

Oxborrow, L., & Brindley, C. (2013). Adoption of "eco-advantage" by SMEs: emerging opportunities and constraints. *European Journal of Innovation Management*, *16*(3), 355-375. [Google Scholar] [CrossRef]

Papadas, K.-K., & Avlonitis, G. J. (2014). The 4 Cs of environmental business: Introducing a new conceptual framework. *Social Business*, *4*(4), 345-360. [Google Scholar] [CrossRef]

Papadas, K.-K., Avlonitis, G. J., & Carrigan, M. (2017). Green marketing orientation: Conceptualization, scale development and validation. *Journal of Business Research*, *80*, 236-246. [Google Scholar] [CrossRef]

Papadas, K.-K., Avlonitis, G. J., Carrigan, M., & Piha, L. (2019). The interplay of strategic and internal green marketing orientation on competitive advantage. *Journal of Business Research*, *104*, 632-643. [Google Scholar] [CrossRef]

Peattie, K., & Belz, F.-M. (2010). Sustainability marketing — An innovative conception of marketing. *Marketing Review St. Gallen*, *27*(5), 8-15. [Google Scholar] [CrossRef]

Polonsky, M. J. (1994). An introduction to green marketing. *Electronic green journal*, *1*(2). [Google Scholar]

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891. [Google Scholar] [CrossRef]

Pujari, D., Wright, G., & Peattie, K. (2003). Green and competitive: Influences on environmental new product development performance. *Journal of Business Research*, *56*(8), 657-671. [Google Scholar] [CrossRef]

Purnama, C., & Subroto, W. T. (2016). Competition Intensity, Uncertainty Environmental on the use of Information Technology and its Impact on Business Performance Small and Medium Enterprises. *International Review of Management and Marketing,* 6, 984-992. [Google Scholar]

Rajadurai, J., Zahari, A. R., Esa, E., Bathmanathan, V., & Ishak, N. A. M. (2021). Investigating Green Marketing Orientation Practices among Green Small and Medium Enterprises. *The Journal of Asian Finance, Economics Business*, *8*(1), 407-417. [Google Scholar] [CrossRef]

Rennings, K. (2000). Redefining innovation—eco-innovation research and the contribution from ecological economics. *Ecological economics*, *32*(2), 319-332. [Google Scholar] [CrossRef]

Ringle, C. M. (2005). SmartPLS 2.0 (M3). [Link]

Rossi, S., Colicchia, C., Cozzolino, A., & Christopher, M. (2013). The logistics service providers in eco-efficiency innovation: an empirical study. *Supply chain management: an international journal*, *18*(6), 583-603. [Google Scholar] [CrossRef]

Rugman, A. M., & Verbeke, A. (1998). Corporate strategy and international environmental policy. *Journal of international business studies*, *29*(4), 819-833. [Google Scholar] [CrossRef]

Santos, D. F. L., Rezende, M. D. V., & Basso, L. F. C. (2019). Eco-innovation and business performance in emerging and developed economies. *Journal of Cleaner Production*, *237*, 117674. [Google Scholar] [CrossRef]

Sarkar, A. N. (2012). Green Branding and Eco-invitations for Evolving Sustainable Green Marketing Strategy. *Asia-Pacific Journal of Management Research and Innovation,* 8(1), 39-58. [Google Scholar] [CrossRef]

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair Jr, J. F. (2014). Partial least squares structural equation modelling (PLS-SEM): A useful tool for family business researchers. *Journal of family business strategy*, *5*(1), 105-115. [Google Scholar] [CrossRef]

Scott, A. J. (2001). *Global city-regions: trends, theory, policy*. OUP Oxford. [Google Scholar]

Scott, R. W., Scott, W. R., & Meyer, J. W. (1994). *Institutional environments and organizations: Structural complexity and individualism*. Sage. [Google Scholar]

Scott, W. (1995). *International and organizations*. Thousand Oaks, CA: Sage. [Google Scholar]

Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, *37*(2), 460-484. [Google Scholar]

Shaukat, F., & Ming, J. (2022). Green marketing orientation impact on business performance: Case of pharmaceutical industry of Pakistan. *Frontiers in psychology*, *13*, 55-91. [Google Scholar] [CrossRef]

Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, *150*, 119762. [Google Scholar] [CrossRef]

Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *Journal of marketing*, *59*(3), 63-74. [Google Scholar] [CrossRef]

Soewarno, N., Tjahjadi, B., & Permatanadia, D. (2020). Competitive pressure and business performance in East Java Batik industry. *The Journal of Asian Finance, Economics Business*, *7*(12), 329-336. [Google Scholar] [CrossRef]

Stoeckl, V. E., & Luedicke, M. K. (2015). Doing well while doing good? An integrative review of marketing criticism and response. *Journal of Business Research*, *68*(12), 2452-2463. [Google Scholar] [CrossRef]

Triguero, A., Moreno-Mondéjar, L., & Davia, M. A. (2013). Drivers of different types of eco-innovation in European SMEs. *Ecological economics*, *92*, 25-33. [Google Scholar] [CrossRef]

Tsai, K. H., & Liao, Y. C. (2017). Sustainability strategy and eco-innovation: A moderation model. *Business Strategy and the Environment*, *26*(4), 426-437. [Google Scholar] [CrossRef]

Turner, P., & Turner, S. (2009). Triangulation in practice. *Virtual reality*, *13*(3), 171-181. [Google Scholar] [CrossRef]

Tyler, B., Lahneman, B., Beukel, K., Cerrato, D., Minciullo, M., Spielmann, N., & Cruz, A. D. (2018). SME Managers' Perceptions of Competitive Pressure and the Adoption of Environmental Practices in Fragmented Industries: A Multi-Country Study in the Wine Industry. *Organization & Environment*, 1-27. [Google Scholar] [CrossRef]

Valaei, N., Rezaei, S., & Ismail, W. K. W. (2017). Examining learning strategies, creativity, and innovation at SMEs using fuzzy set Qualitative Comparative Analysis and PLS path modelling. *Journal of Business Research*, *70*, 224-233. [Google Scholar] [CrossRef]

van der Linde, C. (1995). *Green and competitive: ending the stalemate*. [Google Scholar]

Vilkaite-Vaitone, N., & Skackauskiene, I. (2019). Green marketing orientation: evolution, conceptualization and potential benefits. *Open Economics*, *2*(1), 53-62. [Google Scholar] [CrossRef]

Wang, Y. M., Zaman, H. M. F., & Alvi, A. K. (2022). Linkage of green brand positioning and green customer value with green purchase intention: the mediating and moderating role of attitude toward green brand and green trust. *SAGE Open*, *12*(2), 21582440221102441. [Google Scholar] [CrossRef]

Wanjohi, P., Gachoka, H., Kihoro, J., & Ogutu, M. (2013). Green business: potential for application as a business innovation for wealth and employment creation in Kenya. *Global Business and Economics Research Journal*, *2*(9), 1-12. [Google Scholar]

Wells, V. K., Manika, D., Gregory-Smith, D., Taheri, B., & McCowlen, C. (2015). Heritage tourism, CSR and the role of employee environmental behaviour. *Tourism Management*, *48*, 399-413. [Google Scholar] [CrossRef]

Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of business venturing*, *20*(1), 71-91. [Google Scholar] [CrossRef]

Wong, C. W., Lai, K.-h., Shang, K.-C., Lu, C.-S., & Leung, T. (2012). Green operations and the moderating role of environmental management capability of suppliers on manufacturing firm performance. *International Journal of Production Economics*, *140*(1), 283-294. [Google Scholar] [CrossRef]

Wong, C. Y., Boon-Itt, S., & Wong, C. W. (2011). The contingency effects of environmental uncertainty on the relationship between supply chain integration and operational performance. *Journal of Operations management*, *29*(6), 604-615. [Google Scholar] [CrossRef]

Zahari, A. R., & Esa, E. J. I. J. o. E. S. M. (2018). Drivers and inhibitors adopting renewable energy: an empirical study in Malaysia. *International Journal of Energy Sector Managment*, *12*, 581-600. [Google Scholar] [CrossRef]

Zhang, J. A., & Walton, S. (2017). Eco-innovation and business performance: the moderating effects of environmental orientation and resource commitment in green-oriented SMEs. *R & D Management*, *47*(5), E26-E39. [Google Scholar] [CrossRef]

Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of Operations Management*, *22*(3), 265-289. [Google Scholar] [CrossRef]

Zhu, Q., Sarkis, J., & Lai, K.-h. (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *Journal of Purchasing and Supply Management*, *19*(2), 106-117. [Google Scholar] [CrossRef]

Фатіма Шаукат, PhD, Школа управління, Північно-Західний Політехнічний університет, Китай
Хафіз Мухаммад Факхар Заман, PhD, Школа управління та економіки, Університет науки та техніки Кунмін, Китай
Ті Танг Нга Нгуєн, PhD, Університет економіки та бізнес-адміністрації Тай Нгуєн, В'єтнам
Паовангса Суванксай, PhD, Школа управління та економіки, Університет науки та техніки Кунмін, Китай

Вплив екоінновацій та ринкової невизначеності на зелений маркетинг та ефективність бізнесу

Метою цього дослідження є вивчення впливу екоінновацій на ефективність бізнесу в рамках інституціональної теорії та принципів сталого розвитку. Зокрема, стаття аналізує вплив екоінновацій на ефективність бізнесу та зелений маркетинг. У рамках дослідження побудовано фреймворк, який встановлює зв'язок між екологічними інноваціями, ринковою нестабільністю, зеленим маркетингом та корпоративною ефективністю. Дослідження використовує концептуальні основи ресурсної теорії (Resource Based View, RBV), щоб оцінити потенційний вплив екоінновацій на функціонування компанії в умовах непередбачуваних ринкових динамік. Визначено, що для розвитку позитивного зв'язку між корпоративною ефективністю та екоінноваціями важливо мати всебічне розуміння конкурентного середовища. На відміну від інших галузей, фармацевтичний сектор має можливість вирішувати екологічні питання завдяки унікальним рішенням, адаптованим до його конкретного контексту, а саме його послуг. Ця стаття розглядає вплив ринкової нестабільності та аналізує екоінновації як реакцію на них. Крім того, використовується голістичний підхід зеленого маркетингу для отримання конкурентних переваг та підвищення ефективності бізнесу. Згідно з опитуванням фармацевтичного бізнесу Пакистану, емпіричні результати вказують на те, що конкурентне середовище спонукає галузь впроваджувати голістичну зелену стратегію. Екоінновації слугують посередником між зеленим маркетингом та ефективністю бізнесу. Знайдені результати можуть бути використані менеджерами компаній у процесі прийняття рішень щодо використання екоінновацій для досягнення цілей сталого розвитку, а також впровадження голістичних стратегій зеленого маркетингу. Крім того, ринкова нестабільність пом'якшує вплив екоінновацій на ефективність бізнесу, водночас підсилюючи їх внесок у зв'язок між зеленим маркетингом та ефективністю. Авторами обґрунтовано та описано майбутні напрямки дослідження ролі екоінновацій в Пакистані.
Ключові слова: зелений маркетинг; екоінновації; конкурентне середовище; країна, що розвивається; фармацевтика.