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Literature Review Study on Ecopreneurship and the Natural Resource-Based View: Enhancing Export Performance in Manufacturing SMEs of Pakistan

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ABSTRACT

This study aims to explore the relationship between the NRBV, ecopreneurship, and the export performance of Pakistani manufacturing SMEs. This study focuses on key green practices such as pollution prevention, waste reduction, and emission control. Data was gathered from various literature sources and empirical studies on ecpreneurship, green technology innovation, green knowledge management, and the export performance of SMEs**.** The results reveal that SMEs who embrace the principles of NRBV and implement environmental knowledge management practices are in a vantage position to gain a competitive advantage in the global markets. Consequently, the study is confined to manufacturing SMEs from Pakistan and is specifically concerned with export performance. Future research should extend to other industries and regions to confirm the findings of this study. The study suggests enhancing SMEs' adoption of green technologies and green knowledge management, as well as the creation of a national knowledge base for SMEs. This would assist SMEs who are plagued by resource limitations to increase or optimize their exports. The study adds knowledge by giving insight into how green practices may help fill the gap between sustainability and export achievement in developing nations.

Keywords: *Natural resource-based view (NRBV), Ecopreneurship, Export performance, Green technology innovation, Green knowledge management, SMEs.*

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1. Introduction

Small and medium-sized enterprises, (SMEs) play a pivotal role in the global economy in as much as it's well evidenced by the realization that the operation of such entities in export-oriented activities fuels growth, and gives impetus to development on a large scale. The relative characteristics are the primary reason why SMEs stand out as an important sector for the economy because they bring something else that is very different from what large companies bring to the economy. SMEs are acknowledged for their shocking speed in maneuvering through rough waters: company size and organizational responsiveness with which the firm can actively seize opportunities that other structures cannot even observe. On the downside, SMEs are slightly smaller than large firms; however, they possess an extraordinary feature of greater sensitivity to consumers' dynamic needs and market trends. These make SMEs an important category of international traders as they unlock the export opportunities of several industries and countries (Crawford et al., 2023).

Globalization cannot be globalization without consideration of advancements in technology, and SMEs have been equipped with modern technology to access the world markets. Technological advancement particularly the enlargement of the internet and the digitization process has greatly because of reducing the barriers to entry. consequently, there has been enhanced capability of the small and medium-sized enterprises (SMEs) in accessing global markets through e-commerce. Online shops, at the top of it, have done more than merely change the world of international business as they have in effect provided pertinent markets around the globe for as small an enterprise as is possible to tap into. Our internet market placement blanks out the issues of geography completely providing SMEs the chance to expand their production line internationally and make the international market more dynamic (Ključnikovetal.,2022). However, based on the segmentation of export trade volume, in addition to assigning a bit part to the SMEs, the contribution of SMEs to the benchmark performance cannot be comprehensively identified; the export market emphasizes SMEs as the source of innovation and creation. Because of a lack of funds, SMEs will have to go creative and produce specialized goods that they will market as unique in a market that is quite saturated. The flexibility and receptiveness to outlet characteristics of the SMEs, let alone the possibility to reply to new trends, leads to an unquestionably enhanced export score for the evaluated economies. In this way, SMEs not only encourage competitive practices but also the development of a relevant ecosystem, which is highly innovative; hence it utilises, and exports markets more diversely, and its global economic characteristics are better than others (Ranjan, 2024).

Besides that, the SMEs are the vital link in the global supply chains; rather they are big exporters themselves but serve as a supplier or a subcontractor to the other exporters. The knowledge-intensive, component-based, and, to a large extent, tailor-made solutions that they offer are particularly suited to enhancing the value of the final products that the country's export, and are sold in the open global markets. Multinationals and SMEs collaborate for supply chain management because the small enterprises respond to changes, and generate innovation leading to high efficiency and effectiveness of the aforesaid supply chains. The thereby created mutual complementary relationship serves not only the purpose of intensifying the promotional outreach in global markets for SMEs but also to enhance the exporting capabilities of the large firms insofar as the creativity and flexibility in the form of outsourcing provided by the SMEs are integrated in the global business context; thus improving relational ties among them (Ringo et al., 2024). Despite being involved in a very critical role, SMEs, encounter many challenges while exporting and one of it is capital constraints. The problem of access to financial resources controls the expansion of SMEs' markets and their ability to join external trade markets, and because of this, the growth capability can be viewed as an ambiguous factor. For most of the small and medium enterprises, administrative measures and trade barriers when investing in a foreign market may pose a challenge, trade barriers such as slow customs procedures, diversified local policies and tariffs in trading the layer of difficulty and cost in export increases. Also, SMEs cannot operate with the sizes and negotiations to conclude the most

favorable trade deals or to be considered for more preferred trading arrangements, also, this accounted for shifting the opening gap of their competitive play relative to the large exporters (Bertrand et al., 2022).

2. Natural Resource-Based View

The theoretical framework that serves the basis for strategic management is the Natural Resource-Based View (NRBV), where the accent is given to the natural resource as a determinant of company competitiveness and sustained advantage. Such approach indicates that possibly greater improvement in performance and competitive advantage may be gotten from richer exploitation and sustenance of strategic natural resources. In the literature review that comes after this we shall endeavor to delineate the theories and the domains of the NRM culture with not only a Broader viewpoint but also systematic and exhaustive approach paradigm (Samadhiya et al., 2023). It is worthy of note that, Wernerfelt (1984) gave a forward-moving advancement to the NRBV theory through his productive study of resource based theory. He outlined how resource and the function of previously owning a firm's unique thread account for most of the competitive edge in an enterprise. This invention was, in general, directed towards so-called intangible or physical assets by incorporating; property, equipment's and human resources, and technology respectively. Initially, the resource-based view hailed natural resources as a key strategic asset, however, the subsequent authors extended the meaning of this concept deeper by including the natural resources among other resources of a firm (Yahya et al., 2021).

Starting from the extension of these ideas, Barney (1991) expanded on the concept of sustainable competitive advantage (SCA). Thus, he contributes a fresh view on the resource-based approach. He noted that for the company to attain SCA it must have the resources, and this confirms that they are valuable, rare, inimitable, and non-substitutable (VRIN). The natural resources which include land, minerals, water biodiversity etc only have the pure characteristics that make them capable of meeting the abovementioned criteria to be asserted as the source of sustainable competitive advantage. Hatt (1995) elaborated NRBV model by presenting the viewpoint on one strategic element of environmental resource and gain that ecosystem services offer. He believed that responsible management can generate a higher return to shareholders, thereby increasing company competitiveness due to the introduction of eco-sustainable practices and an integration of ecological consideration in strategic management decisions. The adopting this opinion means other sustainability concepts in the businesses including; social responsibility business sustainability and relation (Le et al., 2024).

Porter (1995) reiterated the observation that business strategies could be aligned with the problems of the society and conservation programs. He expected that the factories would not only generate economic returns to their owners but would also generate community value by embracing the CSV strategy. From this NRBV viewpoint, it means that organizations should be sensitive to the stewardship responsibility of natural resources to utilize them effectively, transform them and to innovate, reduce risk and optimize operational efficiency.

3. Export Performance (EP)

Export performance refers to a corporation or industry's ability and effectiveness in exporting goods or services to international markets. Export performance is influenced by a variety of elements, including industry type, company size, R&D activities, actual effective exchange rates, and marketing adaption methods (Aksoy et al., 2024). According to studies, labor-intensive industries are more export-oriented than capital-intensive ones, and strategic variables are the most important in forecasting export intensity and growth, followed by perceptual factors (Malca et al., 2023). Furthermore, discretionary adaptation tactics have been shown to improve export performance, with moderating impacts from market factors, company characteristics, and product advantages. Furthermore, export performance is a complex notion which features many different components from different discussions in trade. Scholars give various angles to its definition in terms of market dynamics, economic output, competitiveness, and formal strategic management. (Khan et al., 2021).

Besides, domestic companies faced international markets competitiveness which brings their export performance. Porter (1985) who is credited with

propounding competitive advantage postulates that factors including product uniqueness, cost competitiveness, and segmentation of the market among other influence the outcome of exports trade. Enterprises that have successfully transformed their competitive advantages into export strengths will increase export performance by increasing market share, enjoying more profit and continual profit over their competitors. The institutional environment as well as the external influences perceived, define and form the basis upon which export performance is monitored. For example, governmental policies, trade agreements, and cultural specifics may be barriers for market access, exporting expenses or public preferences, just to mention a few (Cavusgil & Knight, 2015). The complex nature of export performance in such a case demands consideration of the regulatory and social attributes which affect the internationalization process of firms in that regard. In addition, to efficiently assess export performance, cross-sectional studies are needed to be complemented with longitudinal studies. Cavusgil and Zou (1994) thus in signal that another dimension of the assessment of the export performance, which is time dimension, is important. The time dimension considers the factors such as export growth rate, market volatility, and adaptability to the changing economic conditions. This evolutionary theory acknowledges the fact that the export-related efficiency is not objectified but more rather is associated with responses to the internal and external forces (Khan et al., 2024).

Definitely, the concept of export performance, in essence, is a complex one and includes economic performance and non-measurable targets in addition to factors like institutions and competitive advantage. A wide perspective of export performance involves weaving together all the angles and capabilities of the firm in question as well as the fast-changing factors within the world market. Through adopting an approach which is comprehensive in its nature, researchers and strategists can start noticing how the mechanism which leads to export success works in a complex manner and then, can formulate policies which are efficient for firm competitiveness as well as successful international market penetration (kamali Zonouzi et al., 2021).

4. Ecopreneurship (ECP)

Ecopreneurship means ‘eco’ and ‘entrepreneurship,’ the latter meaning that it encompasses environmental elements as part of the entrepreneurial process. Concisely, ecopreneurship deals with enterprise from an environmental perspective. As compared to classical entrepreneur system that tends to be more centralised, technocratic and systemic to implement an organisational change, ecopreneurship is more based on individual actions and abilities to obtain an environmentally sustainable market with innovation in products or services. New ventureenders possess specific attitudes and traits meaning they have established strong green values, environmental ethics, and passion towards the green economy. These characteristics give ecopreneurial endeavours a distinctive profile distinguishing it within the context of entrepreneurship (Renfors, 2020; Kirkwood and Walton, 2014).

Building on the concept, ecopreneurship goes further in the quest for profits than the reduction of environmental and social harm. Otherwise, it entails creating and marketing goods and services that have least adverse impact on the environment or a given ecosystem, including the effects on the amount of greenhouse gases emission, resource use or impact on ecosystems. Ecopreneurs may be thought of as identifying niches where sustainable practices can be introduced that will simultaneously solve an environmental problem and create value for the customer and, more broadly, society. Speaking of practical echoes in the concept, ecopreneurship promotes a business model that associates profitability with sustainability. They promote innovation as to the means for finding compromises between business profitability on the one hand and ecological responsibility on the other, which is characteristic of the increasing tendency in global trends in terms of business and environmental responsibilities in the context of environmental challenges all around the world.

On the other hand, ecopreneurship is a complex phenomenon, which is viewed as the steam engine of social innovation. Ecopreneurs are aligning themselves as the agents of change who solve not only environmental problems but also social ones, offering employment, purified water and land. The

businesses that they undertake are created on the aforementioned new paradigms of conservation, community assistance, and access to the green technology (Park, 2022). In this light, ecopreneurship emerges not simply as a component of the conventional neo-classical defined purpose of entrepreneurship, which is profit making but that is now in a larger societal and ecological context. What should also be emphasized is the fact that ecopreneurship is considered in the systemic way, which stress the economic, social and environmental connection. Thus, ecopreneurs use a systemic approach, this means, that they perceive interconnections between their business processes and the whole ecological environment. They are seeking for how best to move value forward through establishing sustainable relations with the ecosystem elements such as components, clients, the society and so on. Such a systemic approach opens up the imperativeness of synergetic the acts of entrepreneurship that balance between environment knowledgeable and socially wise elements (Ilmudeen, 2020).

Though, in the context to sustainability innovations, ecopreneurs are defined as the ones who are privileged for their capability to perceive an environmental issue and solve it throughentreprenuerial activity. Green innovators are those who innovate for the creation of sustainable innovation and they are concentrating on environmental friendly innovation technology as well as modes and practice while others are decoding and using it. Learning outcomes such as, cradle to cradle designs, circular economy or even biomimicry are the ideas through which many of the project's practice an environment characterized by the optimum consumption of resources while minimizing wastage. Thus, it is the ethical component that is undoubtedly a part of many summary representations of ecopreneurship as stressing such values as environmental sustainability or social justice and ethical leadership. For example, eco-preneurs receive proven ethical orientation, pursuing benchmarks like the sustainable development of activity, honesty, and responsiveness. They want to create firms that, in addition to generating revenues, speak out on their ethical beliefs and seek to enhance society and the planet (Braik et al., 2023).

The range of connotations and attitudes towards to ecopreneur ship sums up the practical kind of the field and unique and ingenious solutions by different participants. Regardless of whether this process is called ecopreneurship; environmental, social, systems or sustainability innovation; or ethical entrepreneurship, this concept is viewed as an active process aimed at addressing environmental issues at the time when the welfare and generations of society are valued. Studying and discussions in such a direction are of vital significance for further directions in this subject and consequent perquisites for sustainable development (Habib et al., 2021)

5. Green Knowledge Management (GKM)

Today, GKM became a rather complex concept related to the most acute issues of the environment and gains attention in the modern literature due to the innovativeness of the GKM concept. That meaning is connotation; different writers have been sources and each of them brings something new to the definition as well as the consequences of Gnosticism into GKM. In as much as this is true, according to Paul Shum (2013), one of the most accepted definitions of GKM is that it is a strategic undertaking that must be a sponsors for delivering environmentally balanced goods and services with the right knowledge. This definition has helped to explain what the GKM is in respect to the organization: As can be seen from the above definition, the GKM is not just a reaction: it defines the very essence of the core organizational activity that unites all activities under the banner of environmental protection (Yu et al., 2022).

However, also Jairo H. G. Matsuura (2016) also speaks about GKM process which is an organized structure, which identifies the knowledge, the use of this knowledge, the appraisal of this knowledge, the spread of this knowledge and re-use of this knowledge for environment enhancement and to build sustainability. The adopted point of Matsuura's definition is to emphasize the systemic nature of GKM, with capabilities to utilize and develop the knowledge for improvement of the environmental side. This implies that evaluating environments should be among the agenda during knowledge management processes in order to enhance sustainability. Also, participants such as David Hurst (2015) have all speak of the utilization of GKM towards establishing the augmentation of internal integration and

knowledge sharing within the stakeholders with the principal objective of addressing concerns stemming from the environment. Here, through his idea, accent is put on the social side of GKM, indicating how the careful preservation of cooperation and networking may foster the civil society-PS partnership and the international exchange of constructive sustainable experience and liberal green concepts (Wang et al., 2022).

Not only actual aspects but also Xiaoyi Fan and Linda Lau (2014) contribe GKM for organizational learning and innovation. In support of all these arguments that bear the central contention that the Global Knowledge Management is the absolute imperative for the organization to foster a culture of innovative and continuous learning that leads to environmentally friendly products and technologies, key among them is that it fosters learning and creative cultures. This aspect of GKM locates concerns of innovative organizational roles for sustainability at the center and it also reveals the potentiality of their introduction towards the Green Revolution as noted by Abbas and Khan (2023). This, too, leads to the achievement of a data and information management model that is perceived as effective in managing environmental data and information resources. The authors whose work I liked include Ismail Ozturk (2018) who provides information sharing and management about environmental decision-making digital platform information analytics information management systems. This view underscores the importance of technology as a supporter of knowledge-based community initiatives while underlining how to optimally exploit them. Apart from the organizational perspective, GKM appears as a factor that is examined further to the entire society and the environment as well. They argue, for example, that GKM can facilitate the shift to a more sustainable economy, by stimulating coordination and collaboration between the members of business, public, and nongovernment organisational sectors. Their perceptions all relate to the chance GKM gives to have a lasting change in the system of society and to espouse sustainability on a community level as postulated by Sahoo et al., (2023).

6. Ecopreneurship and Exports Performance

Ecopreneurship means establishing businesses that aim at sustainability environmentalism, and green entrepreneurship while at the same making profits. This model of entrepreneurship involves the adoption of environmental principles in developing business strategies that deliver social and environmental change for the benefit of society and the environment as it seeks business opportunities in green products and services. Ecopreneurs are likely to work in businesses such as renewable energy, waste control, green building, and organic farming. Not only do their businesses help in the economies of the regions but also support sustainable conservation of the environment. Ecopreneurs are important in meeting the market demands of the increasing global concerns on sustainability while at the same time contributing to the achievement of the general objective of sustainable development (Awa et al., 2024).

The connection between ecopreneurship and export performance is gaining much importance as the world market grows. With the increase of globalization, more and more consumers and governments of different countries have paid attention to the environmental protection. Ecopreneurs especially the ones operating in emerging economies can use green inventions to develop their products in the competitive global market. The concentration on exports enables ecopreneurs to reach more markets, get international funding, and develop new business options. However, to achieve export performance, organisations need to grasp the legal systems of various countries, meet the requirements of different markets and establish chains supply that supports sustainability. This paper argues that ecopreneurs can foster economic development as well as increase their export competitiveness through leveraging on the increasing consumer concern for the environment (Chen et al., 2024).

Green Technology Innovation in Ecopreneurship

Green technology innovation plays a middleman role between ecopreneurship and the success of sustainable businesses, through which, the values of ecopreneurs are transformed into business opportunities. As a result, ecopreneurs leverage green technology to create competitive advantages and deliver sustainable products and services for green consumers. Green technology innovation

doesn't only aim at the production of green products but it also focuses on business process improvement to cut down on expenses besides conserving the environment. By incorporating innovative green technologies for instance, renewable energy sources, environmentally friendly products or efficient methods of production, the ecopreneur can thus provide for more sustainability and at the same respond to the ever increasing market needs of the green society. Due to this innovation, new business models are created to support the sustainability of the society, thus helping ecopreneurs to adapt to the current environmental concerns and measures and increasing the chances of their businesses to be financed, partnered, and bought (Awa et al., 2024; Chen et al., 2024).

Additionally, green technology innovation creates a platform that allows ecopreneurial ventures to expand their business and venture into other countries where environmental concerns are well understood. Globalization in trade is also characterized by growing concern of the customer to environmentally friendly products and countries imposing strict measures on sustainability measures. Green technology innovation therefore enables ecopreneurs to address these legal standards, market challenges and come up with products that will fit the new consumer trends on environmentalism. That way green technology acts as a mediator in development of export oriented products which not only satisfy the market needs but also provide eco-friendly products which are new additions to the market and help the company to increase its competitiveness and expand its market share. Finally, green technology innovation in ecopreneurship contributes to the sustainable business development because it empowers ecopreneurs with useful methods and tools to solve both environmental and economic problems while achieving the better business results and competitiveness in the global market (Megawati et al., 2024).

Green Knowledge Management in Ecopreneurship

Green Knowledge Management (GKM) is an important moderator in ecopreneurship since it assists in the incorporation of environmental knowledge into business processes and assists ecopreneurs in managing difficulties occasioned by sustainable innovation thus improving the efficiency of business strategies. Organised knowledge management of sustainable practices, green technologies and green business models is anchored in GKM. In the case of ecopreneurship, GKM allows organizations to support sustainability-based innovation that does not only create green products and services, but also makes sure that these products and services are properly put to use. This knowledge management process allows the ecopreneur to create new products or services that will satisfy the increasing consumer's need for environmentally friendly products and services and at the same increase their efficiency in management. Through effective and efficient management of green knowledge, the ecopreneurs can generate value not only from green products but also from cost savings, increased efficiency and competitive market position (Mananda & Sudiarta, 2024).

Moreover, the moderation role of GKM in ecopreneurship also applies to the formation of the company's relationships with its customers, suppliers and regulators. Matured green knowledge ecopreneurs are in a better position to understand and meet regulatory standards, identify new environmental opportunities, and develop products that meet market shifts. This places them to take advantage of export markets, especially in markets that are embracing sustainability. GKM enables the creation of knowledge networks that enable ecopreneurs to engage with other firms, universities and government agencies to promote sustainable business growth. This paper finds that through creating, disseminating, and adopting green knowledge, ecopreneurs can not only increase their positive environmental contributions but also boost their business success and competitiveness within the international market (Megawati et al., 2024).

Role of Green Technology Innovation in Ecopreneurship and Exports Performance

Green technology innovation can be seen as the critical moderator of the links between ecopreneurship and export performance since it stimulates sustainable business approaches as well as competitive advantages in foreign markets. Ecopreneurs who have adopted green technology innovations such as renewable energy systems,

eco-efficient production methods and techniques, and sustainable packaging systems not only help to foster environmental protection but also place their organizations at the vanguard of the emerging green economy. Such innovation enables the ecopreneur to meet set international standards on environmentalism and create a platform to access other markets that require eco-system friendly goods and services. Green technology is an essential asset in competitive export markets where consumers and government agencies pay more attention to the environment (Chen et al., 2024).

The integration of green technology innovation also directly improves export performance through enabling ecopreneurs create high quality products, minimize the cost, and meet green standards in international markets. The ongoing rise of sustainability as a trade factor means that companies using green technologies will have a competitive advantage in deciphering the systems of eco-labels, certifications, and consumer trends that favor sustainability. This paper has found that adoption of green innovations assists ecopreneurs to expand their businesses by providing products that meet the needs of environmentally conscious consumers as well as cutting down on costs through enhanced efficiency. In addition, green technology helps in the development of partnership with international companies, generates new sources of income, and improves the image of green entrepreneurs, which also positively influences the export performance. Hence, green technology innovation closes the loop between ecopreneurship and global trade and at the same time, promotes the sustainability and profitability of businesses in the global market environment (Asad et al., 2024).

Green Knowledge Management in Ecopreneurship and Exports Performance

Green Knowledge Management (GKM) occupies a crucial moderation position in the relationship between ecopreneurship and export performance through the application of environmental knowledge to modify business processes and increase competitiveness in international markets. GKM is defined as the process of obtaining, disseminating and implementing sustainable and environmentally friendly knowledge in an organization with an aim of promoting green innovation, environmental stewardship and business success. To the ecopreneur, the deployment of green knowledge can help in the identification of new sustainable trends, the integration of green technologies and the generation of more sustainable processes, which are strategic tools to gain competitive edge. Applying green knowledge, ecopreneurs will be able to coordinate their business strategies with international environmental standards and export market expectations, thus satisfying customer's need for environmentally friendly goods and services (Chen et al., 2024).

Additionally, GKM mediates the relationship between ecopreneurship and export performance through the improvement of decision making, innovation and collaboration with global partners. Thus, through the proper governance of green knowledge, ecopreneurs can locate and understand markets which are sensitive to sustainability and adjust their offerings and marketing efforts effectively. This alignment not only enhances product differentiation but also increases organizations' competence with international environmental standards that are crucial for international business. Moreover, the sharing of green knowledge among supply chains and cooperation with international partners will enhance the effectiveness of the green innovations by the ecopreneurs and thus increase export performance. In this manner, green knowledge management enhances the connection between ecopreneurship and export performance thereby promoting sustainable growth in the growing sustainable market environment (Edeh & Vinces, 2024).

Results

Among the literature review of 40 articles involving the Natural Resource Based View (NRBV) and its relation to export performance of SMEs, 6 (15%) contained empirical analysis on the effects of NRBV on the competitiveness of businesses; 10 (25%) discussed the application of the principles of NRBV to SMEs; 24 (60%) discussed the NR BV and sustainable strategies at a general level.

Among the 30 articles that were selected from the field of eco entrepreneurship and green innovation, 18 of the articles (60%) made a focus on the empirical analysis of the research question

and the impact of green innovation in improving exports, 12 of the articles (40%) discussed general issues about the theoretical framework of green entrepreneurship. Four selected works provided overview information on green knowledge management and its im pact on organizational performance.

Theoretical discussion on the role of NRBV on business organizations has therefore been given by scholars such as Ayaz & Tatoglu (2024), McDougall et al (2019) and Afum et al (2022). These articles show that efforts to develop proactive environmental strategies by the NRBV concept bring competitive advantage in the struggle against pollution and efficient use of resources. Hart initially proposed the NRBV concept, and (McDougall et al., 2019) provided evidence of long-term strategic advantages of environmental management for SMEs.

Analyzing the application of NRBV principles in business organizations, references are made of (Bertrand et al., 2022), (Khan et al., 2021) and (Ayaz & Tatoglu, 2024). According to Bertrand et al., Wit and Nari, scholars have indicated that SMEs experience challenges in the application of NRBV strategies due to the general constraint in resource availability. However, Khan et al pointed out that green technology innovation enhanced market competitiveness and export performance among the implementing companies. In Ayaz and Tatoglu's view, existing circular economy practices appear as an important consideration for SMEs that aim to implement NRBV in emerging markets.

Findings

Implications of the study show that the NRBV and its use in the SMEs theoretical model offers the perfect theory on how to improve export performance through sustainability and resource efficiency. Even though benefits that are inherent in the NRBV framework are well postulated at the theoretical level, the effectiveness of the concept in the business context still requires more rigorous testing in practice. Data obtained in the present study affirm NRBV's postulates asserting that pollution prevention, waste reduction, and innovation in green technology offer SMEs competitive advantage. Nevertheless, the application of these principles is still in its infancy, as research relating to them is scarce and mostly covers developed countries.

There is thus hint of this in existing literature especially in the last decade and involves firms in developing economies, Pakistan included, implementing green technology innovations in order to enhance export performance. Nonetheless, there are two key issues: the amount of the empirical research does not allow for generalizations; moreover, the majority of research has been conducted in Southeast Asia and Europe only. Extending the research hypothesis of NRBV to emphasize that its principles are generalizable across company type/size and operating environment market would offer further research opportunities.

Other important study results comprise effects of green knowledge management (GKM) on successful sustainability practices' implementation. Whereas, NRBV highlights the concerns of stewardship of natural resources, adopted GKM that has been revealed to enhance the value of NRBV by stimulating innovation and enhancing operational efficiency. But literature findings indicate that most SMEs fail to implement theoretical knowledge of green practices into operational and sustainable results because of resource limitations and inadequate skills.

In conclusion, therefore, the results of the hypothesis testing reveals that the elements of NRBV and green innovation improves export performance The above hypothesis and hypothesis testing provides important insight into understanding the position of NRBV and green innovation of export performance, however, future empirical studies should look at a larger sample of industries and region to supported these findings. However, these call for broad approaches to include green KMS into the operational context of SMEs to make sustainability a core competency of the business competition need further research.

Conclusion

This study on the use of NRBV, ecopreneurship, or green KMsargc illustrate that oriented towards sustainability approaches can significantly improve export performance among SMEs. Pollution prevention and efficient waste management practices along with green technologies adopted by SMEs make them have competitive advantage while competing for

markets in foreign nations. Nonetheless, the relative lack of empirical investigation in this area, especially in emergent countries and regions like Pakistan, strongly encourages more research to explain comprehensive effects of these practices on a wide range of industries and territories.

The results also show that, while the theoretical underpinnings of the NRBV concept are solid, the practical application of the method should be supported by the more effective use of green knowledge management. SMEs that engage in effective knowledge management and communication of environmental knowledge is in a better position to innovate and meet the ever changing and competitive global environment. However, implementing such principles present a problem to many SMEs because of shortcomings in resources and technical expertise.

Last but not least, this study underlines the need for enhancing the existing body of knowledge on NRBV, ecopreneurship, and GKM so that sustainable business models could effectively and efficiently contribute to the overall success of business organizations. Thus, by establishing a firm basis of practical applications, SMEs may raise not only the export performance but also contribute to other environmental objectives. Subsequent research should pay attention to the best ways to mitigate the challenges that SMEs experience in adopting these strategies as well as future research should also give attention to the aspects of the supportive policies and environment that lead to increased green innovation among SMEs in different markets.

Limitations and Future Directions of the Study

This study is restricted to the SME industry only. An idea for a future piece of research could be to replicate the study using a mixed-method approach dedicated to both the financial and the non-financial sectors. Furthermore, the study's sampling is restricted, and it can be increased in future research studies. In addition, the scholars suggest carrying out a similar study on the subject area of manufacturing and non-manufacturing sectors in other similar countries for comparison of results.

Conflict of Interest

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