



Analysing Research and Development Features: A Comparative Study with Research Management for Sustainable Development in Export Oriented SMEs of Pakistan

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ABSTRACT

This research explores the characteristics of Research and Development (R&D) activities and compares them with research management for sustainable development, focusing on their impact on the export performance of small and medium enterprises (SMEs) in Pakistan. Using a qualitative approach, thirty interviews were conducted with professionals from export-oriented SMEs in Punjab, Pakistan. Discussions focused on the potential of upgrading traditional R&D to align with sustainable development practices. Respondents highlighted the benefits of integrating traditional R&D with research management for sustainable development to enhance export performance. However, the transition requires substantial investment, which poses a challenge for SMEs. Purposive sampling was used, limiting participants to those willing to engage under confidentiality conditions. While qualitative findings offer valuable insights, further quantitative research could provide a broader perspective. The study emphasizes the importance of collaboration between R&D stakeholders and policymakers to harness sustainable research strategies and address systemic barriers. Participants acknowledged that adopting research management for sustainable development could significantly boost exports and help SMEs align with the United Nations Sustainable Development Goals by 2030. The study offers actionable insights for policymakers and stakeholders to strategically leverage research in addressing social and environmental needs, fostering a more sustainable and equitable future. This research identifies best practices and gaps in current R&D approaches, contributing to the literature on sustainable development and offering strategies to enhance SME export performance.

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1. Introduction

Organization and novelties in technology prompt the need for directed research through Research & Development (R&D) and more planning in numerous arenas. In the recent past, the importance of R&D in supporting global challenges especially the sustainability related challenges have been realized (Sarpong et al., 2023). The relationship between sustainable development and export intensity is influenced by several factors that warrant careful consideration. In line with the resource-based view (RBV), internal dynamics often play a more critical role than external factors. Among these, research and development (R&D) intensity stands out as a key determinant. R&D drives growth and productivity by enabling firms to diversify and enhance product quality, thereby addressing customer needs more effectively. A firm's level of R&D significantly impacts its export performance, as the competitive advantages gained through cost reduction, increased efficiency, and effective management of environmental and social issues are particularly relevant, even in emerging markets (Aksoy et al., 2024). As R & D is recognized and incorporated into the attainment of sustainable development there remains a noteworthy gap on

how particular R & D processes can contribute to the enhancement of sustainable development. This indicates an important research gap with regard to a more detailed analysis of how R&D could directly support SDG. Coordination of the research activities is also important in order to ensure that R & D activities are directed towards creation of improved meaningful and impactful outcomes that deal with sustainability challenges (Ionescu et al.). Therefore, this paper seeks to fill these gaps through a cross-sectional analysis of R & D features and research management under sustainable development agenda. The study cross-sectioned industries to compare and contrast how industries had embraced the integration of R&D processes, in order to establish major difficulties and possibilities during the integration of sustainable practices (Berrone et al., 2023). Thus, the study aims at adding value to the existing body of knowledge on R&D for sustainable development and offering relevant information to policymakers, researchers, and industry players on how best to connect innovation to a range of social, economic, and environmental issues as a way of enhancing development outcomes (Bukhari, 2023). Eventually, the aim of this research is to cover more sustainable and equitable future by endorsing the active use of R&D to encounter world-wide challenges. This study has revealed the features of traditional research and development and what is required to link it with the management system to achieve the sustainable development. It has further elaborated the relationship of research management with sustainable development and its importance. In the International Markets the demand of sustainable processes and products has been increasing continually for which research management is vital for the SMEs to fulfil these requirements which can be achieved through proper research management. The study has explored the significance of analysing the features of Research and Development (R&D) in comparison with research management for sustainable development is vital for various reasons. Insights gained from such an analysis can inform policymakers and decision-makers about effective strategies to leverage R&D efforts in achieving sustainable development goals (SDGs). By identifying the features of R&D that most effectively contribute to sustainability, policymakers can prioritize investments and allocate resources more efficiently. Furthermore, R&D is a key driver of innovation, and its alignment with sustainable development goals can lead to the creation of new technologies, products, and solutions that address pressing environmental and social challenges. Analyzing R&D features that support sustainability can guide innovation efforts toward achieving more impactful outcomes.

For businesses, understanding how R&D promotes sustainable development is essential for enhancing corporate social responsibility (CSR) initiatives. By integrating sustainability objectives into R&D processes and research management strategies, companies can demonstrate a commitment to environmental stewardship and social responsibility. Moreover, comparing R&D features and research management practices across sectors and industries facilitates collaboration and knowledge sharing among stakeholders. Lessons from successful R&D initiatives can be shared across industries, fostering partnerships and collective action toward shared sustainability goals. In the context of urgent global challenges such as climate change, biodiversity loss, and social inequality, harnessing the full potential of R&D for sustainable development is critical. By integrating R&D features with effective research management, stakeholders can work collaboratively to address these challenges and build a resilient, equitable future. Analysing the relationship between R&D and research management for sustainable development thus holds significant implications for policy, innovation, corporate responsibility, collaboration, and global challenges, contributing to a more sustainable and prosperous world.

2. Literature Review

The emphasis of this literature review aims to reconnoiter the connection between research and development (R&D) features, research management, and sustainable development in small and medium enterprises (SMEs) in Pakistani context. This part of study has critically analyzed few published articles and books during 2019 and 2024 on the issue. The book "Sustainable Development in Emerging Markets: The Role of SMEs" is dedicated to the understanding of and research into several aspects of sustainable development and, particularly, its relationship to SMEs with references to emerging economies. It provides direction on how R&D practices may be positive influenced for sustainability and innovation amongst SMEs (Smith et al., 2022). The role of innovation through R&D is very important to achieve sustainable development which has three pillars economic, social and. environmental Investment in R&D is very important to attain the sustainable development (Ionescu et al.). R&D-An Innovation Catalyst for Achieving the Sustainable Development Goals. Research management is increasingly

acknowledged as a fundamental pillar of development. Sustainable development encompasses three key dimensions: economic and financial imperatives, social well-being, and environmental conservation. In light of this perspective, it is essential to emphasize that adopting responsible practices is a vital approach for businesses, particularly small and medium enterprises (SMEs), to focus on sustainable growth and societal welfare in their future operations (Raza Ullah Shah, 2024). Innovation is a key driver of SMEs' performance and growth, with creativity turning opportunities into marketable ideas. Investing in R&D is essential for meeting changing customer demands and staying competitive. Product, service, and process innovation enable SMEs to utilize local resources effectively and enhance their overall performance. The shift from traditional closed innovation to open innovation (OI) has allowed businesses to integrate external knowledge and collaborations, linking markets and technologies to create new configurations. SMEs, with their flexible structures, are particularly suited to adopting OI, fostering innovation through partnerships and internal collaboration. This R&D-focused approach not only boosts productivity but also helps SMEs overcome challenges, driving sustainable growth and operational success (Bano et al., 2023).

For countries experiencing high economic growth, sustaining R&D activities is a critical competitive advantage, driving both scientific and socioeconomic progress. Government and public investments in R&D enhance the quality of life, boost tax revenues, and support the production of high-tech goods. R&D is essential for sustainable growth, requiring systematic policies and incentives for innovation in key sectors. Enterprises, regardless of size, must prioritize R&D to remain competitive, develop new products and processes, and adapt to technological advancements. SMEs, in particular, play a vital role in economic growth and innovation, making R&D crucial for improving product quality, reducing costs, and fostering sustainable development (Karakuş & Güneş, 2022). One key finding highlights a positive correlation between process innovation and SME growth in Pakistan. The results indicate that improvements in process innovation led to increased SME growth, contributing to the revitalization of economic activities within the country. Additionally, innovation is shown to have a direct impact on economic development, with high technology influencing economic progress through advancements in process innovation (Subhan, Mehmood, & Sattar, 2013). Innovation and creativity significantly influence SME economic performance and foster economic growth. Higher investments in R&D before entering an industry provide SMEs with a competitive advantage by enabling them to achieve higher returns in the early stages, leverage unique R&D efforts to maintain industry survival, and reap substantial economic benefits. Additionally, reducing entry barriers through rapid imitation allows new firms to thrive by replicating the R&D of successful competitors. Modern technology adoption further enhances SME growth by lowering production costs and improving survivability. Engaging in R&D helps firms minimize costs, mitigate competitive price pressures, and strengthen their technologies to navigate volatile markets. The impact of R&D activities varies across industries and firm sizes, with larger firms and high-technology ventures more adept at leveraging R&D investments than smaller or lower-technology firms (Bokhari, 2022).

The concept of research management for sustainable development has been established through the National Standard PS 5549, titled "Research Management for Sustainable Development," which was created by the Pakistan Standards and Quality Control Authority (PSQCA) under the Ministry of Science and Technology, Government of Pakistan (Pakistan Standard and Quality control Authority, 2022).

The comparative study article "A Comparative Study of R&D and Innovation Management in SMEs of Pakistan and India" points to elements of dissimilarity between SMEs of Pakistan and India regarding the R & D management to offer perspectives on how R & D aids in the advancement of sustainable practices (Bukhari, 2023)

3. Research Methodology

In this study a qualitative research method was adopted to understand how up grading the research and development with research management for sustainable development could impact on the exports of SMEs This Study was comparative and explanatory., which tried to learn the two concepts research and Development and Research Management for sustainable development and their impact on SMEs For data collection two sources were used .First sources was secondary data where e existing literature, reports, and databases were reviewed related

to research and development SMEs, and research management for sustainable development. Secondly Primary data was collected directly from SME,s managers and owners The SMEs working in different industrial cities of the Punjab was the target population for this study . Purposive sampling technic was used to select the sample for data collection . Interview guide was developed to conduct the interviews

4. Results and Discussions

The narrative analysis in this study highlighted the importance of restructuring traditional Research and Development (R&D) practices through research management focused on sustainable development to enhance the export performance of SMEs. Insights obtained from interviews with various SME management personnel were organized into six main categories: the Limitation of Traditional R&D, Importance of R&D ,nonexistence of R&D standard, the importance of sustainable development in international markets, restructuring R&D with research management for sustainable development, and the associated costs and benefits of implementing research management for sustainable

4.1. Limitations of Traditional Research and Development

The respondents expressed their point of view about the limitations of traditional research and development Due to these limitations R&D can not get the required results *Traditional research and development (R&D) face numerous limitations that impede its ability to address the complex challenges of the modern industrial era. One significant issue is that departments or research teams often operate in silos, failing to share insights or collaborate effectively, which can negatively impact the performance and innovation potential of small and medium enterprises (SMEs). This isolation hinders knowledge flow and prevents the synergy that comes from collective problem-solving, limiting creative and effective solutions. Additionally, traditional R&D often lacks the integration of knowledge from a variety of disciplines, which restricts opportunities for cross-disciplinary breakthroughs that are essential in driving forward modern, multifaceted innovation. (Respondent #12).*

In Traditional R&D normally there are small teams, in particular, may struggle due to limited access to advanced tools and software that are crucial for fostering innovation in the current technological landscape. Without these resources, their ability to develop cutting-edge products or processes diminishes, putting them at a competitive disadvantage. This shortcoming is compounded by traditional R&D management's focus on product development without adequately embedding sustainability metrics or environmental considerations at the heart of projects. This oversight can result in solutions that are less resilient in the face of increasing regulatory and environmental pressures. (Respondent #18)

4.2. Research Management Standard

The R&D is an outdated thought and SMEs are acquainted with it even though the majority industrialists are not well informed and committed with it. There is no synchronization among the manufacturing units in their R&D practices. The SMEs expert comprehend that if there have a standard on R& D everyone can practice it to recover their R&D, *Yes, it will be good that we should follow standard of research and development. While using the traditional R &D practices there is no orderly sequence of the activities that are to be followed. While we in Pakistan and even in our neighbouring countries almost never adhere to the written documents then in developed countries, they give strict importance to standards and procedures. I do remember a very usual example that if the developed economy has to place a small dot, it will ensure the standard to place this dot. (Respondent No 04)*

4.3. Importance of Sustainable Development

The reasons, stemming from the consideration of the concept of sustainable development are particularly important in relation to SMEs because the firms of this type play an important role in the economies of the countries across the globe. The main rationale for integrating sustainability into SMEs' management is that it helps to optimize their competitiveness and insulate them from adverse effects controlled by environmental social factors at a lower cost. SMEs could therefore open up new market opportunities through the integration of sustainability practice into their operations; over the recent past, the market place holds organizations that embrace the culture of environmentally friendly close to heart. In addition, sustainability can also develop efficient use of the firm's resources in long run strategic management with regard to

change in legal provisions and supply networks. In the last analysis, the sustainable development principles assist SMEs to meet the needs of the environmental and social needs that are requisite for making SMEs sustainable and successful in a world that is gradually becoming sensitive to environmental and social needs. Today people are not focused on the Sustainable developmental activity but if this point is built, it will be very useful, it will be effective for the environment and the industry, especially for the export, we will produce more, and it will be good for the environment. (Respondent #03).

4.4. Plan Do Check Act Method

In essence, the PDCA is a formal process implemented in organizations whereby professionals seek to find the solutions for the mentioned requirements for improvement in products, services and a number of processes. This entails coming up with objectives as well as the steps that should be followed in the accomplishment of those objectives. Yet, to top off that cake, we do implement the plan which is the 'Do' portion of it. The next stage to be implemented in this case is the Check phase where aims and objectives are evaluated against the achieved results. The fourth and last of the four steps are in the Act phase where the Plan is implemented with modification and enhancements by the Check phase, then returns to the Planning phase for another cycle to start over. Accessible April 12, 2014 from the University of Phoenix e-Resource, it fosters learning culture, innovation and improvement processes to generate ways of dealing with context in organizations with view to enhancing performance and productivity within organizations with regard to the experiences attained in the long run.

Insisting on constructing sustainable development practices from the Plan-Do-Check-Act (PDC) cycle is a very reasonable approach that may indeed have significant effects on SMEs. Such a cycle offers a clear sequential structure for improvement and is the core element of the work in that it continuously repeats the process, which is consonant with such values as sustainability. It enables an SME to formulate and execute sustainable strategies, evaluate their success, and make improvements to increase beneficial environmental, social, and economic impacts and improve the overall competitiveness of the firm and its ability to withstand market pressures (Respondent , #06).

4.5. Research Plan for Sustainable Development

Scholarly research policy for sustainable development is indispensable in meeting the world's urgent needs and at the same time help create sustainable development and Absolute well-being. It means developing policies and direction for research activities in relation to sustainability goals, which concern the preservation of the natural environment, fairness in the people's treatment and effectiveness of the economy. Such policies promote an integrated approach in place, innovation and knowledge exchanges to promote courses of action that optimize for the present from the future. They also encourage stakeholder participation for effective research to capture the needs and values of the society. Similarly, governments, institutions and organizations, should complement their research policy for sustainable development in order to push for change, support improvements in sustainable practices and progress towards the creation of a better future.

Yes, it will be advantageous if there will be plan for research and sustainable development and it will be verified. It will give way to all and they will get about it so they can evaluate the research procedure on the diverse phase. (Respondent No 05)

4.6. Leadership Support

CEOs have a crucial part to play in research management and sustainability development undertakings, as found by the author. While independent researchers need clear goals and priorities, the leaders are to offer vision and steer research in the directions that will help achieve general sustainability goals. They bring together researches in a common platform hence providing a basis for interdisciplinary research work and cooperation in the development of sustainable solutions. Also, good governance facilitates proper dissemination of resources, lobbying for funds and infrastructure to support research activities. Additionally, leaders provide the culture that fosters innovation, yet responsibility, assuming that researchers should develop new solutions, but those solutions should be ethical. In other words, by embracing sustainability strategies and managing change in organizations, leaders enable research management to deliver significant positive impacts for change towards sustainability. *The leadership role is significant for the success of standard. It is respectable that Research management for*

sustainable development has distinct the part of leadership which will certainly play a significant role to rise the exports performance of the SMEs. (Respondent No.03)

4.7. Risk and Opportunities

In the context of research management for sustainable development, risk management and opportunity management are most important. They may be related to financial constraints, regulatory issues or the unpredictability of intricate bio-, geo-, and socio-technical systems. Risk management include assessment of risks which may hinder achievement of a certain goal, ability to find ways which can reduce the impacts of a certain risk, and the ability to change direction slightly when meeting certain obstacles. But in all these issues there are so many possibilities. The research efforts can develop new solutions to existing real-life sustainability challenges and can fuel technological advancement and social change. Investing approaches by interdisciplinary and cross sectorial work with the obtainment of heterogeneous composition may help to advance the practice of sustainable development. Further, there are economic benefits of effective research management as well as risk and recruitment for investment to nurture economic development of the country as well as increase the health of the population, hence improving their standard of living as a result translating the rewards to the current and future generations. Hence, risks are managed whilst opportunities seized, which makes and effective research management a tool for advancement of sustainable development.

Well if the risks and opportunities are managed during the planning phase it will be good so u have the steps in mind to take if such risks occur, for example if you go beyond your budget limits or key person of your team leaves the job what will you do? Thus, all the risk and opportunities are described and it will be useful for the further research of the development of the SMEs. (Respondent # 4)

4.8. Criteria for Sustainable Development

Principles of sustainability act as guidelines to effect positive change in society to maintain and create sustainable development for now and in the future. Such criteria often comprise environmental, meaning the use of resources in the natural environment, the minimization of negative effects on the environment, and the reduction in climate change effects. Social justice is also another core component of the social contract in which resources, education, health care, and other basic human needs and wants for all people should be addressed. Also included is economic feasibility which means that the focus is placed on the sustainable economic development, employment generation and development of environmentally friendly technologies. Sustainable development criteria are introduced in many countries and imply the interconnection of these three dimensions to support sustainable solutions regarding societies and their environments.

Defining comprehensible sustainability standards in every stage of the research can greatly help the small business to participate in the achievement of the 2030 Sustainable Development Goals. The guidelines tend to offer a comprehensive method of guaranteeing that innovative research is in compliance with sustainable goals. Through the above guidelines, small businesses can be certain that their activities and innovations are pro economy, society, and efficiency. This structured approach increases the chances of small businesses to foster progress toward the achievement of the SDGs and the corresponding improvement of their competitiveness and sustainability. It enables them to act with intent in the things they do, making the outcomes profits with an expanded positive impact on overall society. (Respondent No.09)

4.9. Internal audit

This paper has rightly highlighted the importance of internal audit in management of research for sustainable development through checking of achievements in research activities, efficiency in use of resources and accountability. Internal auditors actively investigate different aspects of research such as process, procedures, and costs in order to find out potential reporting area or lack of compliance, or operational inefficiency. Through identifying linkages between research related activities, sustainability objectives and compliant measures, internal audit plays a significant role of finding solution to risk problems, improving organizational efficiency and productivity, and managing resource utilization. Furthermore, internal audit promotes change and learning by offering suggestions on how to strengthen research processes, data management

procedures and methods of engaging stakeholders in research for the improvement of sustainable development impact of research. Due to strong monitoring and assessing, internal audit plays a significant role in enhancing the credibility and efficiency in managing research to support sustainable development.

This can be well understood if we realize that monitoring is very crucial in the performance of a system in question. If the mechanism of internal audit and monitoring has been included in the research management for sustainable development standard it will be very useful for the export performance of SMEs. (Respondent No. 03).

4.10. Management Review

Research Management for sustainable development standard has an element of management review which has made it compatible with other ISO management system standards. Management review is vital to check the research activities to make them aligned with organization Objectives towards sustainable development. It helps the organization to analyse its existing management system and provide a foundation to set new directions.

"Management reviews in line with research management for sustainable development play an important role in enhancing export performance of SMEs. This process provides objective feedback on SMEs' sustainable strategies hence enable them to determine the effectiveness of his/her strategies, areas that require improvement and better adaptations in the market. Through having regular management review process, SMEs are in a position to more respond to the global markets based on sustainable development hence enhancing competitiveness while exhibiting themselves as responsible exporters" (Respondent #.9)

4.11. Improvement

Improvement of research management for sustainable Development Systems relates to environmental, social and economic mechanism for inclusive development. This also includes enhancing effectiveness of activities that are deployed enhancing access, communication between the researchers and others involved in the projects applying technologies to utilizing the resources and actualizing the objectives set towards enhancements of effectiveness. Through enhancing the process of disclosure of the organisational structure of the management of research funding and activities, organisations are equipped with ways of guaranteeing the sound management of the existing and additional funds essential in achievement of set sustainability goals. In addition, the capacity development and the training work in parallel to enable staffs and researchers to undertake several activities in the achievement of sustainability objectives and targets by providing a basic skill set. Over time, monitoring and evaluation processes are also, thus enabling learning/-development of improvements that enable organizations to adapt/change plans/strategies as they undertake their work. In conclusion, the general improvement in research management could be expected to improve positive results in global sustainable development if more emphasis is paid to optimization of practice which can be implemented in practice incorporating the use of research.

The structural systematic approach in managing research for sustainable development, which identifies and solves issues at its center, is highly beneficial for SMEs competing in the global economy. It encourages SMEs to keep on improving to meet new standards that are expected by the global market, customers' demand as well as other developing situations. This enhances their quality and sustainability of their products just as it also enhances their flexibility and capability to compete meaningfully in the international market. Also, it ensures that the culture of personal and organizational learning is developed and sustained, a constituent which is seminal to building a sustainable export advantage (Respondent #06).

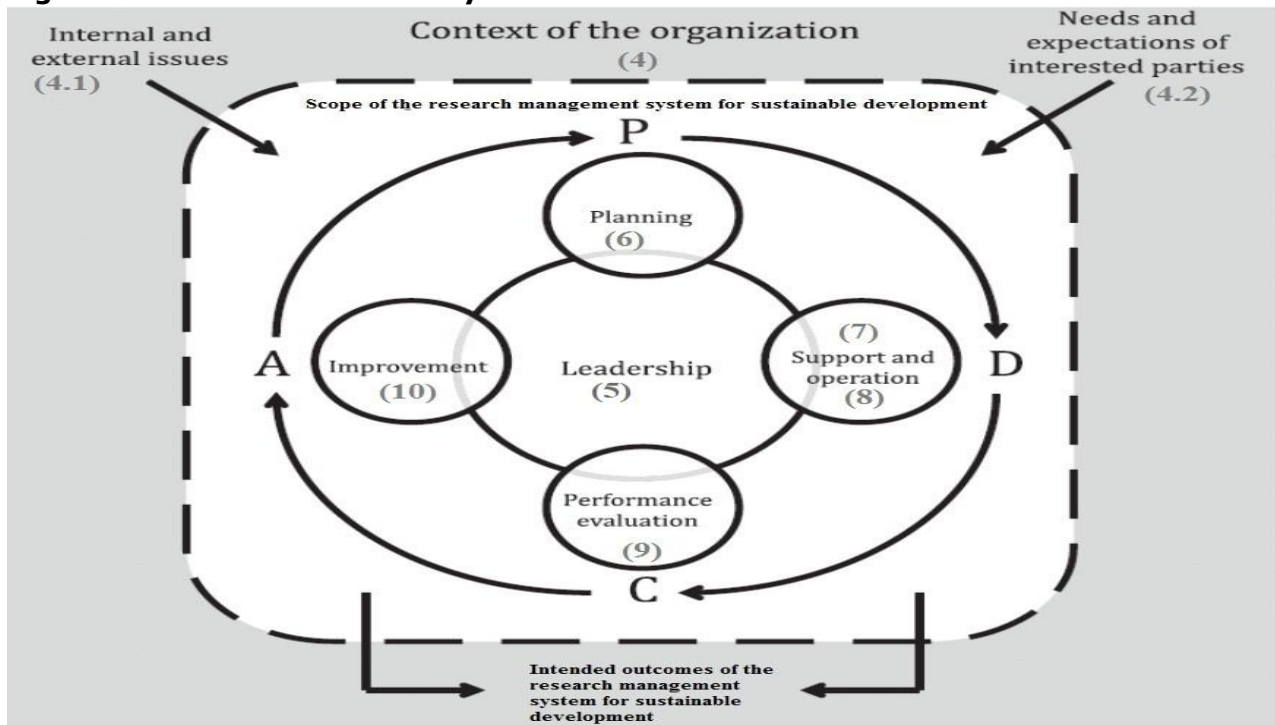
Table 1: Comparison of R&D With Research Management for Sustainable Development

Ingredients	Research and Development (R&D)	Research Management for Sustainable Development (RMSD)
Research Management Standard	✗	✓
Significance of Sustainable Development	✗	✓
Plan Do Check Act Approach	✗	✓
Research Policy for Sustainable development	✗	✓
Leadership Support	✗	✓
Risk and Opportunities	✗	✓
Criteria for Sustainable development	✗	✓
Internal Audit	✗	✓
Management Review	✗	✓
Improvement	✗	✓

4.12. Standard for Research Management for Sustainable Development

Research Management for sustainable development has been developed on the similar pattern like other international standards e.g. ISO 9001:2015 and 14001:2015 and 45001:2018 and so on. The purpose of this standard is to transform conventional RA&D into knowledge and management system and development. Pakistan Standard and quality control authority a department of Ministry of Science and technology has develop it as a national standard. This is a broad contingency theory which can be implemented in any organization. It is as effective for the SME companies, large businesses, service sector, schools, profitable and non-profitable organizations. This standard in documented form states that it is necessary to provide a structure to follow for all types of organizations. It includes the 10 clauses and is underpinned by PDCA (Plan -Do- Check-Act) model. A copy of this standard is provided in the following annexure section.

Figure 1: Plan-Do-Check-Act Cycle



Plan-Do-Check-Act Cycle

4.13. SMEs Export Performance

Research management for sustainable development plays a crucial role in the export performance of Small and Medium Enterprises (SMEs) in several ways. research management

for sustainable development plays a crucial role in the export performance of Small and Medium Enterprises (SMEs) in several ways:

Applying the market information tools help SMEs identify which market they can access for exportation of their products, the customer's preference on certain products and how they change their products or services to fit the preference. However, it worth to note that if the decision related to a specific product line or a product related practice are related to export by SMEs can be influenced if such products or practices can be sustainable and meets the market requirements. It was found that it is possible to make sustainable technologies for materials and resources to develop strong and good products as an enhanced substitute to the traditional one that causes much damage to the environment. Such green product can be marketed and appeal environmentally sensitive consumers in export nation hence increasing the heterogeneity of markets and export productiveness.

5. Conclusion and Recommendations

Sustainable supply chain management is not an exclusive obligation of the experts entropy but it can open the vision for SMEs to enhance its productivity and profitability and minimize its negative effect on the environment. This paper shows how sustainability when connected to research management can be of advantage to SMEs in the following ways; Building on the stakeholder relationship, customers, suppliers, workers, residents in the community. The SWOT analysis of the sustained suggesting solutions SMEs may include. To enhance the trust and credibility as well as the brand established through communication to show their activities may help SMEs gain, the sustainable business, achieved through long-term partnering as a solution for reaching the objectives of SMEs and the surrounding stakeholders. RMSD has provided to SMEs a reference document for orienting their research towards implementing the UN- SDGs for 2030 by undertaking certain activities. Therefore, integrating sustainability factors into the management of research will create new opportunities, and develop new resolutions for SMEs, and positively impact social betterment and environmental issues. It will assist SMEs to position their research activities of the global sustainable development goals' agenda in a more timely manner, not only to improve their capability in order to adapt to more changes in the growing and continuously evolving global market and address other challenges affecting the globe as well as the long lasting vision of fostering sustainable and equitable future for all.

"Possible positive indication can be assumed about the 'export sensitivity' index and turnover of SMEs if research and development is upgraded with research management for sustainable development. This transition would enable SMEs not only to find new ways of unleashing value but also to position their outputs in conformity with environmentally friendly factors that are now a selling point in the global market. Through full incorporation ESG factors into R & D SMEs raise the value of products through the eyes of the new generations of buyer and business partners around the world. Also, through this approach, responsible and business-oriented practices in SMEs are encouraged; their competitiveness increased and, thus, are prepared for the change of environment in global trading." (Respondent # 5)

5.1. Recommendations

SMEs should upgrade their traditional R&D with research management for sustainable development. It can facilitate the SMEs to link the research with the management systems and help them to make their operations sustainable Applying the research Management for sustainable development can enhance their export performance.

5.2. Theoretical, Managerial Implications and Future Research Directions

5.2.1. Theoretical Implications

This study explores a novel theoretical insight by combining traditional R&D with research management for sustainable development and analyzing its impact on the export performance of SMEs in several cities in Punjab, Pakistan. They have also theoretically contributed to the understanding of how aligning research practices to management systems might drive sustainable development, as viewed by the SMEs' professionals.

The findings indicate that the R&D level must be raised to an optimal level, which will help develop a model or framework for organizations to follow in their alignment of research strategy with organizational functions. This theoretical perception denotes the critical role played by

research management in the overall attainment of sustainable development, a concept that has rapidly gained grounds within the global markets.

Another significant theoretical contribution of this study is to demonstrate how the adoption of research management principles for sustainable development can ensure heightened SME exports. This insight adds to the body of literature on sustainable development and export performance, while establishing a theoretical framework in which SMEs are best placed to assist the international community in attaining the Sustainable Development Goals (SDGs) by 2030.

5.2.2. Managerial Implications

This study aids in creating affiliation between the research and the management system according to the perception of the SME professional we seek to enhance export performance for sustainable development. They think that type of research and development has to be raised on another level and that the most important is that there has to be a plan which everyone adopts for the research strategies to play their part in all company's functions to achieve sustainable development which is much more sought after in the world markets. The SME professionals interviewed appreciated that they can apply the Research management for sustainable development standard to boost their exports. This understanding when practiced will provide a guideline on how SME can be positioned to play a role in achieving the sustainable development goal of 2030.

5.3. Recommendations for future Researchers

Despite the awareness that SMEs have on sustainable development research management being more advantageous than traditional Research & development. But none of these organizations has done so because this standard is relatively new. It will be even beneficial if some researchers can continue studying this problem for more detail at the level of particular organizations when they use and implement the Research management for sustainable development standard.

5.4. Limitations

It is also necessary to note that there are some limitations of this research study; among them, the following are worth to be mentioned:

i.. Actually, it needs to be emphasized that it is impossible to have a single study be completely governed by the idea of comprehensiveness at its maximum and most rigorous level. This is because as it will be seen when locating the findings of this thesis within its inherent constraints it will be seen that:

ii. In the presented research the practice of the research was conducted with a comparatively small number of participants, 37 participants in total, 7 participants took place in Pilot studies stage, 30 participants took place in the Main data collecting stage. Therefore, there is a potential that with more samples the range of variability of the polar levels of consciousness with be broader.

iii. In this case, purposive sampling was applied to select participants to the study, but the above-mentioned research methodology was not without challenges; the most dominant one relating to the tight schedules of the respective professionals. Therefore, the sample was restricted to the people who were willing to observe conditions pertaining to disclosure of their involvement; (refer to acknowledgment section/respondents).

iv. Although this kind of qualitative research provides some promising findings, it is reasonable to use such findings combined with the quantitative research concerning more extensive variables linking members to meet policy requirements.

References

- Aksoy, M., Yilmaz, M. K., Golgeci, I., Tatoglu, E., Canci, M., & Hizarci, A. E. (2024). Untangling the Influence of Corporate Sustainability on Export Intensity: The Moderating Role of R&D Intensity. *Journal of International Marketing*, 1069031X231214233. <https://doi.org/https://doi.org/10.1177/1069031X231214233>
- Bano, M., Nawaz, M., Ahmad, T., & Ejaz, F. (2023). The Performance of Small and Medium Sized Enterprises (SMEs) in Punjab: A Moderating Role of Corporate Image. *Bulletin of Business and Economics (BBE)*, 12(3), 650-666. <https://doi.org/10.61506/01.00090>
- Berrone, P., Rousseau, H. E., Ricart, J. E., Brito, E., & Giuliadori, A. (2023). How can research contribute to the implementation of sustainable development goals? An interpretive review of SDG literature in management. *International Journal of Management Reviews*, 25(2), 318-339. <https://doi.org/10.1111/ijmr.12331>
- Bokhari, S. A. A. (2022). An Empirical Examination of the Impact of Initial Capital, Prior Experience, and R&D on SMEs' Survival and Economic Performance: Moderating Role of Innovation Culture. *Journal of Small Business Strategy*, 32(4). <https://doi.org/10.53703/001c.36937>
- Bukhari, A., & Farooq, M. . (2023). A comparative study of R&D and innovation management in SMEs of Pakistan and India. *South Asian Journal of Business and Management Studies*, 20(3), 67-85.
- Ionescu, C.-D., Bălăţeanu, A.-M., Vasile, V., & Mihai, M. R&D-An Innovation Catalyst for Achieving the Sustainable Development Goals.
- Karakuş, G., & Güneş, K. (2022). Essentials of sustainable development: SMEs and R&D. A research to determine the barriers to R&D in SMEs. *Business & Management Studies: An International Journal*, 10(1), 22-40. <https://doi.org/10.15295/bmij.v10i1.1905>
- Pakistan Standard and Quality control Authority, P. (2022). Research Management for Sustainable development (Pakistan Standard No. PS 5549).
- Raza Ullah Shah, D. K. A. (2024). Research Management for Sustainable Development Impact on SMEs Exports in Pakistan. *Remittances Review*, 9(2), 3764-3783.
- Sarpong, D., Boakye, D., Ofosu, G., & Botchie, D. (2023). The three pointers of research and development (R&D) for growth-boosting sustainable innovation system. *Technovation*, 122, 102581. <https://doi.org/10.1016/j.technovation.2022.102581>
- Smith, H., Discetti, R., Bellucci, M., & Acuti, D. (2022). SMEs engagement with the Sustainable Development Goals: A power perspective. *Journal of Business Research*, 149, 112-122. <https://doi.org/10.1016/j.jbusres.2022.05.021>
- Subhan, Q. A., Mehmood, M. R., & Sattar, A. (2013). Innovation in Small and Medium Enterprises (SME's) and its impact on Economic Development in Pakistan. Paper was presented in 6th International Business and Social Sciences Research Conference,