



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

Advance Journal of Econometrics and Finance

Online ISSN

Print ISSN

<https://ajeaf.com/index.php/Journal/About>

Name of Publisher: SCHOLAR CRAFT EDUCATION & RESEARCH HUB

Review Type: Double Blind Peer Review

Journal Frequency: Quarterly Research Journal



The Impact of Sustainable Leadership on Sustainable Innovation in the SME Sector of Khyber Pakhtunkhwa (KP): The Mediating Role of Internal Marketing in Achieving Sustainable Development Goals (SDGs)

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<p>Talha* Assistant Professor, Abasyn University Peshawar. Talha1857@gmail.com</p> <p>Prof. Dr. Waqar Alam Professor, Abasyn University Peshawar.</p>	<p>Abstract</p> <p>The article under study examines the complex connection between sustainable leadership and sustainable innovation in Small and Medium Enterprises (SMEs) in Khyber Pakhtunkhwa (KP), Pakistan. Trying to incorporate the idea of sustainability in their operations, SMEs confront enormous challenges that force the business enterprises to operate in environments that are not conducive with regard to awareness, limited resources, weak political systems and policy environments, among others, restricting their capability to pursue meaningful sustainability practices. The research design is a cross-sectional study, which relies on quantitative research design to determine the mediating effect of internal marketing to enhance sustainable innovation activities in SMEs. The findings suggest that sustainable leadership positively affects sustainable innovation and successful internal marketing is a necessary pushing power in the specified relationship. The research is pertinent to the research literature on the role of sustainable leadership and internal marketing in enabling SMEs to be innovative and in accordance with the global sustainability goals. The study acknowledges the constraints in terms of the geographic scope and the perspective of the stakeholders, and the future research should focus on a variety of leadership styles and the general demographic considerations. This study offers realistic implications to stakeholders who want to enable sustainable development in the SME sector through awareness creation and favorable policies.</p>
<p>Keywords:</p>	<p>Sustainable Leadership, Sustainable Innovation, Internal Marketing, SMEs, Khyber Pakhtunkhwa, Sustainability, SDGs</p>



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Introduction

Sustainable leadership has become a key ingredient of developing sustainable innovation in the present fast changing global world (Achmad & Wiratmadja, 2024). This leadership style focuses on morally sound decision making, prudent resource management and encouragement of responsible practices within organizations (Ritchie-Dunham et al., 2023; Waqar et al., 2024). This is possible by leaders practicing the values of sustainability in order to establish a culture that promotes innovation and empowers all stakeholders (By, 2021).

Sustainable innovation refers to the process of innovating and introducing new ideas, processes and business models aimed at dealing with urgent environmental and social issues, and at the same time creating economic value (Taghizadeh et al., 2024). Through sustainable innovation, organizations are able to transform with the dynamic market, and improve their brand reputation and respond to the demands of the emerging environmentally and socially conscious consumers (Vaisman et al., 2021).

Within the context of the small and medium-sized enterprises (SMEs), the impacts of sustainable leadership regarding the creation of sustainable innovation have become more relevant (Castellano et al., 2022; Zamani, 2022). Several SMEs have realized the need to incorporate sustainability concepts in their decision making and organizational culture, and are vigorously trying to minimize their environmental impact by taking part in a wide range of activities (Achmad & Wiratmadja, 2024).

Besides, internal marketing plays significant mediating role between sustainable leadership and sustainable innovation (Qiu et al., 2021). It includes building a sense of belonging with the employees, creating good communication channels and a vision of sustainability (Achmad & Wiratmadja, 2024). By successfully executing internal marketing strategies, sustainable leaders increase the understanding, commitment and involvement of the employees to the sustainable practices and hence create a team work environment that drives innovative ideas (Fuciu & Șerban, 2022). Although the connection between sustainable leadership and sustainable innovation is relatively clear, the mechanism behind the relationship has not been examined comprehensively. The proposed research will help fill this gap by exploring the mediating effect of internal marketing in the pursuit of sustainable innovation activity in SMEs in Khyber Pakhtunkhwa (Ahsan & Khawaja, 2024).

This holistic approach aims at developing important findings to the organizations and policymakers who are struggling to align their efforts with the sustainable development objectives (Moiceanu & Anghel, 2024; Tu et al., 2025). With sustainable leaders who are engaging in effective internal marketing approaches, organizations will be able to work together to push the sustainability to innovation and work towards a fairer and more conscious future of the environment (Govindan, 2022; Moiceanu & Anghel, 2024).

The sustainable leadership and sustainable innovation have great potential to contribute to the development of SMEs in KP, Pakistan. There are however major impediments to their successful adoption. Although more and more SMEs are becoming aware of the need to incorporate sustainability in their operation, the overall lack of knowledge and understanding of principles of sustainable leadership in the minds of proprietors and managers has been the cause of focusing on short-term gains at the expense of long-term benefits (Basit et al., 2024; Le et al., 2023).

This problem is also complicated by resource constraints since lack of sufficiently available funds, technological skills and knowledge and expertise hinder the capacity of SMEs to invest in sustainable practices (Corazza et al., 2021). This under investment will lead to a reduction in the rate of innovation denying these businesses the competitive edge of sustainability based products and services (Pardo-Jaramillo et al., 2025). Besides, lack of favorable policy and regulatory framework also plays a greater role in worsening the predicament of SMEs (Waqar et al., 2024). The absence of incentives, subsidies, and proper guidelines do not encourage such enterprises to practice sustainability. Also, the capacity building requirement and skills development is vital as most of the SMEs lack the required information and training to put into effective use sustainable practices as well as to take advantage of growth opportunities (Ijomah et al., 2024).

Provided that such challenges go unattended, the overall development of sustainable leadership and sustainable innovation at the KP in SMEs is probably to stagnate. This stagnation not only restricts the opportunities of the sustainable development of the region but also slows the progress of the region toward environmental sustainability and economic competitiveness. Thus, the proposed study will examine the effects of sustainable leadership and sustainable innovation with special focus on the mediating effect of internal marketing on the promotion of sustainable development objectives of the SME sector of KP, Pakistan.

The need to conduct further research on sustainability has gained momentum by scholars all over the world as a major leadership agenda. The increased global sustainability development expectations as it has been demonstrated by the UN Sustainable Development Goals (SDGs) has prompted global leaders and policymakers to redefine their leadership models to be more sustainable (Suriyankietkaew et al., 2022). Although the existing literature deals with the issues of sustainable, environmental, and sustainability leadership in the education sector, large enterprises, and the government, the literature on sustainable leadership in SMEs is limited (Boeske & Murray, 2022).

Sustainable innovation (SI) is perceived as a continuous cycle of learning, exploring, and perceiving that allows the SMEs and business organizations to innovate new processes, markets, and better products and services (Abbas et al., 2020). Nonetheless, the changes brought about by innovation may be positive and negative, and not every



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innovation is necessarily affected by sustainability. There is also the limitation of resources, which restricts small businesses even more than big businesses (Widya-Hasuti et al., 2018).

Sustainability has become a very important aspect towards the longevity and prosperity of any organization. However, SMEs do not easily practice sustainability on all levels. Inadequate studies recognize the mechanisms that can help the SMEs to come up with innovative ways of staying competitive (Núñez-Ríos et al., 2020). Empirical studies on sustainable leadership styles in SMEs have been conducted internationally (Boeske & Murray, 2022; Qaisar Iqbal, 2022; Suriyankietkaew et al., 2022). Sustainable innovation has been explored as an independent variable (Vaisman et al., 2021), a dependent variable (Muhammad Arshad et al., 2023; Nasiri et al., 2021; Widya-Hasuti et al., 2018; Yi et al., 2019), and as an outcome variable (Abbas et al., 2020). The COVID-19 pandemic and the UN SDGs have further emphasized organizational sustainability as a top priority for firms, shifting focus beyond mere profit to include corporate social responsibility (CSR) and long-term survival.

The demographics, individuals, and place have a great impact on the performance and survival of firms. Although there has been quality research on SMEs working internationally and within the Pakistani borders (especially the Punjab), the firms of KP are usually neglected. The proposed study is expected to become an important contribution to the research on leadership, innovation, and sustainability in the context of the failing province of KP.

Literature Review

Small and Medium Enterprises (SMEs) in Pakistan

SMEs are an important part of the economy of Pakistan, which is considered to be the unsung heroes and can have a great impact on economic development. SMEs are historically based on family-run businesses that were developed in the industrial revolution and have constantly changed to address the needs of the changing market demands (Henschel & Heinze, 2025). Their significance has been realized the world over and this has resulted in favourable government policies and organizational support that focuses on strengthening their advancement and sustainability (Sagita et al., 2024).

Pakistani SMEs play a significant role in providing employment and innovation, providing an economic lifeline in the regions where large businesses might fail. Such businesses bring life to local areas and provide them not only with a source of employment, but also with a hope of improved future (Israr Ahmad & Ahmad, 2021). They, however, have to face intense competition, including demanding availability of formal funds, bureaucratic disappointments and shortage of qualified labor supply (Küchler et al., 2022). The operational environment of the SMEs should be enhanced through the holistic approach that incorporates the governments, financial institutions and community organizations. Such interventions are financial support, liberalization of the regulation, and absorption of technology, all of which are essential to establish an effective ecosystem of SMEs (Budiarto et al., 2024).

Role and Challenges of SMEs in Khyber Pakhtunkhwa (KP)

The strength of SMEs in KP is so high to a point that they are entrenched within a complex environment that is typified with a myriad of challenges such as lack of financing facilities among other challenges that is caused by infrastructural constraints that would derail business operations (Ahmad et al., 2021). These businesses are also instrumental in raising the GDP of KP because they develop the local entrepreneurship and create the employment (Adeel Akhtar et al., 2023). This is thus a disadvantage to the KP SMEs due to the sheer power of the Punjab economic muscle and this adds to the problems of competition and resource allocation (Xin et al., 2023). The entrepreneurial setting is also not exactly stable considering that entrepreneurs have to operate in a complex intertwining of risk owing to unstable security conditions. However, these obstacles notwithstanding, the emergence of SME is an indicator of hope and endurance hence depicting the character of entrepreneurship which defines KP (Ali et al., 2021). These are the problems that should be addressed through transformative and understanding leadership that will help to build a self-confidence and creativeness in the SME industry. Leaders should ensure transparency, accountability, and inclusivity and provide an environment where growth can take place (By, 2021).

Sustainable Leadership in SMEs

Sustainable leadership is the approach toward leading organizations with the consideration of the needs of both current and future stakeholders and fits into the broad principles of environmental stewardship, social responsibility, and sound decision-making (Waqar et al., 2024). The model is critical in promoting sustainability culture among SMEs especially in developing economies such as Pakistan where SMEs are usually challenged to comprehend and practice sustainability (Shah et al., 2020). Resource constraints notwithstanding, the SMEs are poised to gain through sustainable practices which not only contribute to the realization of the environmental and social objectives but also result in the improvement of their competitive advantage through resource-based efficiencies in operation (Zamani, 2022).

Internal Marketing as a Driver of Innovation

The internal marketing is a very important aspect in the SMEs as it helps in adapting the employees to the vision and values of the organization, engagement and sustainable innovation. As the internal customers, the treatment of employees would guarantee their participation in attaining organizational goals (Kaniawati et al., 2024). With proper internal marketing initiatives especially in regard to sustainability, motivation and commitment of the employees can be boosted and result in better performance and a culture of innovation (Qiu et al., 2021). However, there is a paucity of empirical studies on the particular effect of internal marketing on SMEs in KP, which means that more studies are required in this direction (Abdul Waqar et al., 2023).

Sustainable Innovation in SMEs

Sustainable innovation refers to coming up with new processes and practices that can address the current needs but are sustainable to the environment (Mousavi & Bossink, 2017). In the case of SMEs especially where a limited amount of resources is available such as in Pakistan, innovation is essential in terms of competitiveness and sustainability. However, the adoption of sustainable innovations can be hampered by some challenges such as the financial constraints and organizational problems (Shah et al., 2020). Such barriers can be resolved by the concerted efforts, including the collaboration with the local authorities and research institutions, which will promote the spread of knowledge and availability of resources that can be instrumental in creating sustainable innovation.

Alignment with the United Nations Sustainable Development Goals (SDGs)

United Nations Sustainable Development Goals (SDGs) are offered as a set of provisions according to which the SMEs have an opportunity to invest in the sustainability of the global environment, not to mention that they have an opportunity to enhance the sustainability of their own business. When operational strategies are adjusted to the SDGs, SMEs will have the opportunity to maximize the use of resources and increase their competitiveness in the market, which will contribute to solving acute global issues (Bexell & Jönsson, 2017). Partnerships and community partnerships lead to a group effort of initiating activity towards sustainability that is beneficial to the organization and the community at large (Makhura, 2024). The alignment with SDGs does not only contribute to improving the business practices but also encourages employee engagement and retention by bringing a sense of purpose to the workforce.

To conclude, SMEs in Pakistan and especially in KP are an indispensable part of the economic development, job creation and innovation. Nevertheless, there are major challenges that they struggle with and can be alleviated through collective effort on the part of the government, financial institutions, and the community. The resilience and competitiveness of these enterprises can be improved through adopting sustainable leadership and innovative practices and aligning them with the global sustainability models, which will eventually result in the growth of the economy and improvement of the community. The future research ought to address the dynamics within the SMEs with a specific emphasis on the mediating role of internal marketing and sustainable innovation in facilitating sustainability of the organizations in difficult environments.

Research methodology

Research Design

The research design used in the study based on the quantitative cross sectional design is intended to study SMEs that operate in KP, Pakistan. The concept of adopting this form of design is supported by the fact that SMEs have a huge contribution to the GDP of the nation, their potential assistance in the reduction of poverty, the generation of jobs, and the establishment of sustainable innovation (Matloob et al., 2023).

Population and Sampling

The study target population is the SMEs in KP, and the total number of SMEs operating in Pakistan is about 3.2 million. According to recent reports, it can be considered that the best sampling frame is offered by the Small and Medium Enterprises Development Authority (SMEDA), where the agency has 2,504 SMEs that used their walk-in services (Ali et al., 2021). The study used a 5% margin of error and a 95% confidence interval to identify a sample size. Under this statistical method, the obtained sample size (n) is 377, which is sufficient to represent the population of study (Ali et al., 2020).

Measurement and Instrumentation

A designed questionnaire was embraced and it was used to gather data under two sections. The demographic information of the respondents, including age, gender, position, and qualifications will be contained in the former section. The second part assesses the targeted variables with three significant constructs:

Sustainable Leadership: Scale (14 items with 5-point Likert scale with 1 = strongly disagree and 5 strongly agree). Among the questions, there are issues concerning socially responsible operations, environmental management, ethical decision making, willingness of managers to tackle sustainability problems, creating wealth by performing sustainable operations driven by purpose, and development of a sustainable culture through communication programs.



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Sustainable Innovation: Measured with 6 items with a five-item Likert scale. This area consists of questions on how sustainable innovation processes and products can be created, designed, and implemented in SMEs.

Internal Marketing: It has 15 questions rated using the five-point Likert scale. It addresses sentiments like the vision communication within the organization, investment and training of the employees in skills, performance measurement systems, support of teamwork, as well as the relevance of internal communication.

Data Collection Procedure

A self-administered questionnaire that was well structured as viewed in Annexure "A" was employed in collection of the data to facilitate the validity of the research. The survey methodology aided in the efficient gathering of the responses amongst the survey members and the data gathered was organized and exhaustive.

Data Analysis

The data was collected and analyzed statistically in SPSS and the most recent release of Smart Partial Least Squares (PLS). This was analyzed using multiple linear regression, structural equation modeling and descriptive statistics which were used to convert the responses into reasonable percentages.

Analysis of data involved the use of the Cramer von Mises test to test the goodness of fit of the items that measured Sustainable Leadership (SL1 to SL14). The findings showed considerable difference in test statistics with the range of 3.155 (SL9) to 7.149 (SL2), and the p-values were always at 0.000. This led to the rejection of the null hypothesis of all items, which depicts significant deviation of normality in the perceptions of sustainable leadership among the respondents. This variability means that respondents experience may be in subject to different contextual differences that should take into consideration non-parametric means of further analysis to avoid misleading interpretation that may occur because of the use of parametric tests of normal distribution.

In the same fashion, the test score of Sustainable Innovation items (SI1 to SI6) showed test scores of 3.926 (SI3) to 5.056 (SI2) with all the p-values being zero. This proves the point that the respondents are not unanimous about sustainable innovation, and there is a necessity to research in detail the factors that drive their ratings. In the case of Internal Marketing items (IM1 to IM15), the statistics of the Cramer von Mises test are between 3.558 and 6.271 (IM12-IM5) which support the occurrence of significant deviations of normality. This heterogeneity suggests that these differences in the degree of endorsing the opinions of the respondents might reflect that there are complex processes that occur at the background which needs to be researched further.

The reliability of the constructs was assessed through Cronbach's Alpha and Composite Reliability coefficients, yielding satisfactory results: Sustainable Leadership (Alpha = 0.879, ρ_a = 0.881, ρ_c = 0.899), Sustainable Innovation (Alpha = 0.861, ρ_a = 0.862, ρ_c = 0.896), and Internal Marketing (Alpha = 0.872, ρ_a = 0.875, ρ_c = 0.893). These measures guarantee internal consistency of the measures that are applied. Additional mediation analysis has been done according to Sobel, Aroian, and Goodman tests in order to identify the indirect impact of internal marketing on sustainable innovation-sustainable leadership relationship. The results revealed that the mediating effects are significant with Sobel test statistics of 7.641, Aroian statistics of 7.634 and Goodman statistics of 7.648 of p-value of 0.000. This justifies the argument that internal marketing enhances the relationship that exists between sustainable leadership and sustainable innovation, although the direct influence of sustainable leadership cannot be overlooked with the implication that a partial mediating role occurs

Two hypotheses were tested namely H1 (Sustainable Leadership → Sustainable Innovation) p-value 0.000 (Accepted) and H2 (Sustainable Leadership → Internal Marketing → Sustainable Innovation) p-value 0.001 (Partial Mediation Accepted). The theoretical framework of the study which is the complex interaction of the constructs is backed up by these results. Overall, the review provides valuable results on the inconsistency of the views of the respondents concerning the concept of sustainable leadership, innovation, and internal marketing, and it should be mentioned that the future research must be conducted with careful methodological tools to enable the revelation of the specifics of sustainable SME practices.

Discussion

This paper highlights the importance of relationship between sustainable leadership (SL) and sustainable innovation (SI) in the field of SME in KP, Pakistan. It was established that successful sustainable leadership practices and encouragement of innovation processes have a very close relationship in such organizations. The items in sustainable leadership had a mean score ranging between 3.577 and 4.029, which showed that the perception of the respondents regarding sustainable leadership was overall positive. These responses constitute negative skew that means that the perceptions tend to be on the higher side of the scale that depicts that there is a positive side of the leadership practices in

the sector. The fact that the standard deviations of 0.826-1.153 are different reflects the point that there are different perceptions of specific leadership traits and thereby further supports the idea that the approaches of SMEs to sustainable leadership are different.

The average values of sustainable innovation were positive as well ranging between 3.750 and 3.947. This illustrates the same positive approach towards sustainable innovation activities in such organizations. This opinion is supported by reliability findings of both constructs, as the Cronbach Alpha of sustainable leadership and sustainable innovation is 0.879 and 0.861, respectively, which is above the acceptable level of 0.7. The fact that the Composite Reliability values (0.881 in the case of SL and 0.862 in the case of SI) are high, also confirm the soundness of the measurement scales. The values of the Average Variance Extracted (AVE) of both SL and SI, 0.390 and 0.591 respectively, have shown that a significant amount of variance in items observed can be explained through these constructs.

The path coefficient between sustainable leadership and sustainable innovation was found to be as high as 0.291 and such a p-value is of significance as 0.001. The given results prove Hypothesis 1 (H1) as it shows that the explanation of sustainable innovation by sustainable leadership practices is possible to 55.8%. Although the F-square of 0.081 indicates a rather insignificant effect size (p -value = 0.121), the whole path analysis displays the importance of sustainable leadership as a driver of innovation. The findings are consistent with the available literature that suggests that an effective leadership will not only motivate and engage the employees but will also provide conducive environment that encourages experimentation and creativity needed in the development of innovation.

Concurrently, the paper has also explored the mediating effect of internal marketing between sustainable leadership and sustainable innovation. The mean scores of internal marketing ranged between 3.691 and 4.080 and obtained significant positive result of internal marketing practices of their organization and the statistically significant Cramer von Mises test scores ($p < 0.001$). The factor analysis indicates that internal marketing explains 81.909 percent of the variance of this construct hence it is so significant. The reliability analysis gave out a Cronbachs Alpha of 0.872 and a Composite Reliability of 0.875 which is a good internal consistency.

The results demonstrate a strong path coefficient of 0.754 ($p = 0.000$) between sustainable leadership and internal marketing which depicts that successful sustainable leadership boosts the internal marketing activities. Besides that, the orientation between internal marketing and sustainable innovation led to a very significant coefficient of 0.260 ($p = 0.001$) demonstrating the vital role of internal marketing in the innovation in SMEs. The mediating variable of internal marketing has a p-value of 0.000 and thus justifies the conceptualization that internal marketing has a major role to play in mediating the relationship between the sustainable leadership and sustainable innovation.

These results highlight the importance of SMEs to recognize the importance of sound internal marketing strategies that can be linked with sustainable leadership. Organizations would become much more innovative by providing the setting in which the employee engagement and the presence of the efficient communication can be promoted. Internal marketing: Under the higher participation and innovation of employees, the improved innovation and market competitiveness would demand plan internal marketing set ups including special training programs and employee reward plans.

In conclusion, it can be stated that the findings of the research in this paper suggest that the variables which affect sustainable innovation in SMEs in KP include sustainable leadership and internal marketing. It is under such considerations that the organizations would be able not only mobilize their employees, but also inculcate the spirit of creativity and cooperativeness, which would be essential in the realization of the sustainability goals, especially in a province that is developmentally challenged.

Conclusion

The study is concerned with the critical interaction of sustainable leadership and sustainable innovation in SMEs in KP, Pakistan. This study describes the remarkable difficulties that SMEs encounter in an attempt to win the mandate of incorporating sustainability into their business including awareness, the availability of resources, and ineffective policy framework. The barriers play a crucial role in the capacity of effective adoption of sustainable practices that are important in ensuring long-term growth and high innovation rates.

The results show that sustainable leadership affects sustainable innovation positively with great persuasiveness. Sustainable leaders, not only increase the capacity of their organization, but also work towards the overall societal interests implying that successful leaders are the pillars in developing a culture of innovation. The fact that hypotheses were accepted on both direct and mediated effects of sustainable leadership highlights the complex nature of relationships that exist between leadership, internal marketing, and sustainable innovation. These relationships can be shed more light on the interaction between these constructs, which is important in developing countries such as KP, which is the aim of the study.

However, such studies also admit some limitations. The geographical direction of four main cities and the confined scope of the study of particular sectors might limit the extrapolation of the results. In addition, the use of the perception of the SME owners alone without the multifaceted stakeholder mindsets presents a picture that may not be a complete picture of the situation regarding sustainability as far as these businesses are concerned. The discovery of these limitations gives us a point of departure for further study.

It is consequent that the subsequent research must consider the different forms of leadership such as transformational leadership and strategic leadership and consider their interaction with the organizational sustainability within more diverse spectrums of SMEs. Investigating the influence of demographic factors on sustainability activities and the role played by organizational culture and employee engagement in this study will be of assistance in our study on this elaborate topic. The importance of sustainability, especially the economic and environmental stability of a region like KP, and the development of a culture of sustainable operations among SMEs, aided by policies and training programs, are crucial.

Finally, the study does not only add to the academic discussion on sustainability in SME, but also shows some practical implications on the stakeholders such as industry associations, government agencies and educational institutions. Group work can help the SMEs in KP to triumph over their sustainability processes successfully and therefore play a significant role in the local and global sustainable development agendas through the joint endeavors in creating awareness and enabling the provision of requisite resources.

References

- Abbas, J., Zhang, Q., Hussain, I., Akram, S., Afaq, A., & Shad, M. A. (2020). Sustainable Innovation in Small Medium Enterprises: The Impact of Knowledge Management on Organizational Innovation through a Mediation Analysis by Using SEM Approach. *Sustainability*, 12(6), 2407. <https://doi.org/10.3390/su12062407>
- Abdul Waqar, Junaid Ahmad Zia, Sohail Ahmad Phatak, Dr. Tariq Rafique, Mmuhammad Aqib Shafique, & Mehmood6, S. (2023). Impact Of Internal Marketing On Competitive Advantage In The Construction Industry Of Pakistan: The Mediating Role Of Innovation.
- Achmad, F., & Wiratmadja, I. I. (2024). Driving sustainable performance in SMEs through frugal innovation: the nexus of sustainable leadership, knowledge management, and dynamic capabilities. *IEEE Access*.
- Adeel Akhtar, Muhammad Shaukat Malik, & Khan, F. A. (2023). Policy on SMEs in Pakistan: Relationship between Entrepreneurial Orientation, Firm Performance, and Ownership Structure.
- Ahmad, N., Mahmood, A., Han, H., Ariza-Montes, A., Vega-Muñoz, A., Din, M. u.,...Ullah, Z. (2021). Sustainability as a “New Normal” for Modern Businesses: Are SMEs of Pakistan Ready to Adopt It? *Sustainability*, 13(4), 1944. <https://doi.org/10.3390/su13041944>
- Ahsan, M. J., & Khawaja, S. (2024). Sustainable leadership impact on environmental performance: exploring employee well-being, innovation, and organizational resilience. *Discover Sustainability*, 5(1), 317.
- Ali, S., Jabeen, M., & Khattak, B. (2021). Constraints to the Growth of Small and Medium-Sized Enterprises in Khyber Pakhtunkhwa (KP), Pakistan: A District-Level Survey Analysis. *Business & Economic Review*, 13(1), 89-110. <https://doi.org/10.22547/ber/13.1.5>
- Ali, S., Jabeen, M., Qazi, L. T., & Jabeen, A. (2020). Financing Behavior of Small and Medium Sized Enterprises of Khyber Pakhtunkhwa at Life Cycle Stages. *Journal of Applied Economics and Business Studies*, 4(3), 159-184. <https://doi.org/10.34260/jaeb.437>
- Basit, S. A., Gharleghi, B., Batool, K., Hassan, S. S., Jahanshahi, A. A., & Kliem, M. E. (2024). Review of enablers and barriers of sustainable business practices in SMEs. *Journal of Economy and Technology*, 2, 79-94.
- Bexell, M., & Jönsson, K. (2017). Responsibility and the United Nations’ sustainable development goals. *Forum for development studies*,
- Boeske, J., & Murray, P. A. (2022). The Intellectual Domains of Sustainability Leadership in SMEs. *Sustainability*, 14(4), 1978. <https://doi.org/10.3390/su14041978>
- Budiarto, B. W., Karyadi, S., Judijanto, L., & Febrian, W. D. (2024). Analysis of the influence of spiritual capital, motivation and work competencies on performance of human resource in SMEs sector. *JEMSI (Jurnal Ekonomi, Manajemen, Dan Akuntansi)*, 10(1), 240-246.
- By, R. T. (2021). Leadership: In Pursuit of Purpose. *Journal of Change Management*, 21(1), 30-44. <https://doi.org/10.1080/14697017.2021.1861698>
- Castellano, R., Punzo, G., Scandurra, G., & Thomas, A. (2022). Exploring antecedents of innovations for small- and medium-sized enterprises' environmental sustainability: An interpretative framework. *Business Strategy and the Environment*, 31(4), 1730-1748. <https://doi.org/10.1002/bse.2980>
- Corazza, L., Cisi, M., & Falavigna, G. (2021). The enabling role of formalized corporate networks to drive small and medium-sized enterprises toward sustainability. *Business Strategy and the Environment*, 31(1), 545-558. <https://doi.org/10.1002/bse.2909>
- Fuciu, M., & Șerban, A. (2022). Internal Marketing and Human Resources Management – a Simple Relationship or an in-Depth Synergic Effect? *Revista Economica*, 74(4), 18-23. <https://doi.org/10.56043/reveco-2022-0033>



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- Govindan, K. (2022). Tunneling the barriers of blockchain technology in remanufacturing for achieving sustainable development goals: A circular manufacturing perspective. *Business Strategy and the Environment*, 31(8), 3769-3785. <https://doi.org/10.1002/bse.3031>
- Henschel, T., & Heinze, I. (2025). Small and medium-sized enterprises (SMEs). In *Open Innovation And Knowledge Management In Small And Medium Enterprises* (pp. 7-34). World Scientific.
- Ijomah, T. I., Idemudia, C., Eyo-Udo, N. L., & Anjorin, K. F. (2024). Innovative digital marketing strategies for SMEs: Driving competitive advantage and sustainable growth. *International Journal of Management & Entrepreneurship Research*, 6(7), 2173-2188.
- Israr Ahmad, & Ahmad, S. B. (2021). Effect of Managerial Skills on the Performance of Small- and Medium-Sized Enterprises: A Case Study in Pakistan. <https://doi.org/10.13106/jafeb.2021.vol8.no4.0161>
- Kaniawati, K., Rahmani, S., Ariawan, A., Fadhlani, A., & Ahmad, A. K. (2024). Digital navigation: The role of marketing literacy, employee engagement, and internal culture in SMEs' success. *Jurnal Aplikasi Manajemen*, 22(4).
- Küchler, R., Nicolai, B. M., & Herzig, C. (2022). Towards a sustainability management tool for food manufacturing small and medium-sized enterprises—Insights from a Delphi study. *Corporate Social Responsibility and Environmental Management*, 30(2), 589-604. <https://doi.org/10.1002/csr.2376>
- Le, D. V., Le, H. T. T., Pham, T. T., & Vo, L. V. (2023). Innovation and SMEs performance: evidence from Vietnam. *Applied Economic Analysis*, 31(92), 90-108. <https://doi.org/10.1108/aea-04-2022-0121>
- Makhura, M. N. (2024). Sustainable Development Goal 17: Partnerships for the goals. In *Handbook on Public Policy and Food Security* (pp. 394-405). Edward Elgar Publishing.
- Matloob, S., Limón, M. L. S., Montemayor, H. M. V., Raza, A., & Rodriguez, J. C. C. (2023). Does Strategic Change Enhance the Relationship between Firms' Resources and SMEs Performance in Pakistan? *Sustainability*, 15(3), 1808. <https://doi.org/10.3390/su15031808>
- Moiceanu, G., & Anghel, C. (2024). SDGs adoption within Small-Medium Enterprises (SMEs) for sustainable entrepreneurship. Proceedings of the International Conference on Business Excellence,
- Mousavi, S., & Bossink, B. A. G. (2017). Firms' capabilities for sustainable innovation: The case of biofuel for aviation. *Journal of Cleaner Production*, 167, 1263-1275. <https://doi.org/10.1016/j.jclepro.2017.07.146>
- Muhammad Arshad, Chen Kun Yu, & Qadir, A. (2023). Leadership and Sustainable Innovation: A Systematic Literature Review.
- Nasiri, M., Saunila, M., Rantala, T., & Ukko, J. (2021). Sustainable innovation among small businesses: The role of digital orientation, the external environment, and company characteristics. *Sustainable Development*, 30(4), 703-712. <https://doi.org/10.1002/sd.2267>
- Núñez-Ríos, J. E., Sánchez-García, J. Y., Rojas, O. G., & Olivares-Benitez, E. (2020). Factors to Foster Organizational Sustainability in Tourism SMEs. *Sustainability*, 12(20), 8657. <https://doi.org/10.3390/su12208657>
- Pardo-Jaramillo, S., Gómez, M. I., Muñoz-Villamizar, A., Lleo-de-Nalda, Á., & Osuna Soto, I. (2025). Towards sustainable organizations through purpose-driven and customer-centric strategies. *AMS Review*, 1-37.
- Qaisar Iqbal, K. P.-S. (2022). Sustainable Leadership, Environmental Turbulence, Resilience, and Employees' Wellbeing in SMEs. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.939389>
- Qiu, J., Boukis, A., & Storey, C. (2021). Internal Marketing: A Systematic Review. *Journal of Marketing Theory and Practice*, 30(1), 53-67. <https://doi.org/10.1080/10696679.2021.1886588>
- Ritchie-Dunham, J. L., Gonçalves, A. C., Huerta, M. A., Mataix, C., Lumbreras, J., Moreno-Serna, J.,...Purcell, W. M. (2023). Advancing sustainability leadership by shifting relational 'agreement structures': a transformational higher education change program. *Journal of Integrative Environmental Sciences*, 20(1). <https://doi.org/10.1080/1943815x.2023.2190385>
- Sagita, A., Shamsudin, M. S., Ramli, A., Budiharjo, R., & Himawan, A. F. I. (2024). Business strategy and small and medium enterprises (SMEs) performance: The moderating role of the business environment. *PaperASIA*, 40(2b), 33-41.
- Shah, Y., Liu, Y., Shah, F., & Shah, F. (2020). Challenges of small- and medium-sized businesses in Pakistan due to COVID-19 pandemic. *R-Economy*, 6(3), 222-226. <https://doi.org/10.15826/recon.2020.6.3.019>



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- Suriyankietkaew, S., Krittayarungroj, K., & Iamsawan, N. (2022). Sustainable Leadership Practices and Competencies of SMEs for Sustainability and Resilience: A Community-Based Social Enterprise Study. *Sustainability*, 14(10), 5762. <https://doi.org/10.3390/su14105762>
- Taghizadeh, S. K., Rahman, S. A., Nikbin, D., Radomska, M., & Maleki Far, S. (2024). Dynamic capabilities of the SMEs for sustainable innovation performance: role of environmental turbulence. *Journal of Organizational Effectiveness: People and Performance*, 11(4), 767-787.
- Tu, Y.-X., Kubatko, O., Melnyk, L., Li, R., Kovalov, B., & Yaremenko, A. (2025). Economic, institutional and environmental drivers of SMEs' development in the EU: sustainable development goals perspective. *Environment, Development and Sustainability*, 27(8), 20101-20119.
- Vaisman, E. D., Podshivalova, M. V., & Alola, A. A. (2021). Examining the interaction of sustainable innovation activity and the life cycle of small high-tech enterprises. *Business Strategy and the Environment*, 31(3), 1018-1029. <https://doi.org/10.1002/bse.2932>
- Waqar, A., Houda, M., Khan, A. M., Qureshi, A. H., & Elmazi, G. (2024). Sustainable leadership practices in construction: Building a resilient society. *Environmental Challenges*, 14, 100841.
- Widya-Hasuti, A., Mardani, A., Streimikiene, D., Sharifara, A., & Cavallaro, F. (2018). The Role of Process Innovation between Firm-Specific Capabilities and Sustainable Innovation in SMEs: Empirical Evidence from Indonesia. *Sustainability*, 10(7), 2244. <https://doi.org/10.3390/su10072244>
- Xin, Y., Khan, R. U., Dagar, V., & Qian, F. (2023). Do international resources configure SMEs' sustainable performance in the digital era? Evidence from Pakistan. *Resources Policy*, 80, 103169. <https://doi.org/10.1016/j.resourpol.2022.103169>
- Yi, L., Uddin, M. A., Das, A. K., Mahmood, M., & Sohel, S. M. (2019). Do Transformational Leaders Engage Employees in Sustainable Innovative Work Behaviour? Perspective from a Developing Country. *Sustainability*, 11(9), 2485. <https://doi.org/10.3390/su11092485>
- Zamani, S. Z. (2022). Small and Medium Enterprises (SMEs) facing an evolving technological era: a systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, 25(6), 735-757. <https://doi.org/10.1108/ejim-07-2021-0360>