



Implementation of Strategic Decision-Making and Digital Technology to Attain Sustainable Performance in the Pakistan Context

Fahad Saddique¹, Nauman Mushtaq² & Urenna Nwagwu³

¹Ph.D. Scholar, Institute of Management Science, Lahore, Pakistan, Email: fahad.sadique@gmail.com

²Ph.D. Scholar, Institute of Management Sciences (IMS), Lahore, Pakistan, Email: nauman_mushtaq1@yahoo.com

³Independent Researcher, Email: rennychi7@gmail.com

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Corresponding Author:

Fahad Saddique

Email:

fahad.sadique@gmail.com



ABSTRACT

Advances in technology enable greater access to artificial intelligence (AI), machine learning, and virtual reality (VR) technologies. As such, firms will be required to utilize technological resources efficiently to maximize strategic management and resource utilization as access is simplified. In this study, we aim to investigate how technology influences digital-based strategic decisions and activities that ultimately influence a firm's sustainable competitive position. We surveyed 240 SMEs that employ significant levels of digital technology in their global operations and have a commercial presence in Pakistan. The SPSS Software is used for analysis. Our results demonstrate that adopting alternative strategies in technology and business model innovation significantly improve overall firm performance. Furthermore, our results show that implementing strategic actions will significantly influence sustainability in firms. This study contributes to the body of knowledge regarding the role of technology in enabling sustainable competitive positions by incorporating the following theories, the unified theory of technology acceptance and use, and the dynamic ambidexterity theory. Ultimately, this research supports integrating decision-making processes and digital technology to enhance organizational performance in increasingly complex international marketplaces.

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Introduction

As global marketplaces continue to evolve through technological advancements, it is becoming increasingly important for companies to develop the digital skills needed to compete effectively and achieve long-term growth (Verhoef et al., 2021). To meet the growing demand for these skills, the European Commission has developed the Digital Europe Program (DEP), a major initiative within its long-term digital strategy. With an allocation of €7.58 billion over the period from 2021 to 2027, this program seeks to increase Europe's digital sovereignty and resilience through investments into High Performance Computing, Artificial intelligence, cybersecurity, and advanced digital skills (European Commission, 2021). The DEP will encourage the public and private sectors to embrace digital transformation, thereby supporting Europe's position as a leader in sustainable and inclusive technology. By encouraging the take-up of digital technology, EU policies for Green Development, Digital Inclusion, and Innovation Capability will also be supported (Peñarroya-Farell & Miralles, 2021). Both the Dynamic Ambidexterity Theory (DAT) framework (Cozzolino & Verona, 2024) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) highlight the importance of environmental and institutional enablers in determining

whether a business adopts technology. Therefore, the Digital Europe Program is an essential vehicle for accelerating digital transformation within businesses and achieving sustainable performance in uncertain, rapidly evolving economies. Research studies have focused on Fitness & social media, Education Technology, and Agriculture & Financial Technologies (Chiu et al., 2024). Digital technology adoption has specific challenges and opportunities for both Born Global and Graduate internationalized businesses. Businesses with excellent capabilities for rapid entry into global markets through digital technologies are exceptional cases of dynamic ambidexterity. Being able to adapt quickly is critical for businesses and their employees to adopt new technology and be flexible across different global markets. Research papers indicate that there are currently two significant gaps in the literature on the digital transformation of international business performance. There is limited understanding of how foreign businesses use digital technology to improve efficiency and effectiveness (Zaid et al., 2025). Most often, the application of such technologies results in changes to organizational structures, enabling timely decision-making and increasing interaction with customers and stakeholders through real time communication via AI integration (Orlandi et al., 2025). There is a lack of research investigating how digitalization can improve organizational performance by enhancing capacity building, providing access to strategic resources, and increasing productivity and User Experience (Mazzoni & Sedita, 2025; Jawad et al., 2025; Aziz et al., 2025). Understanding these areas is vital for developing additional theoretical and practical insight regarding the appropriate digital transformation strategies for Multinational Organizations. Beginning with a focus on user experience, research based on the User Acceptance and Use of Technology (UTAUT) theories emphasizes how an organization's users, in addition to other organizational and environmental factors such as performance expectations, social influence, and enabling conditions, can encourage or discourage the adoption and effective use of digital technologies within organizations. Theories of strategic choice and internal organizational dynamics that lead to adoption in global and gradual internationalization organizations will be examined. While there has been considerable research in education, healthcare, fintech, e-commerce, and related areas on integrating theoretical models into international business and strategy, a significant opportunity exists to understand the effects of digitalization on the relationship between strategic choice and action. An application of the concepts of DAT and UTAUT may offer additional insight into how digital sophistication influences the strategic behaviors and long-term viability of organizations operating in increasingly globalized and technologically saturated markets. International growth strategies of traditional firms would also likely find value in applying UTAUT and DAT principles. Many firms that are growing internationally operate under several constraints. Often, they have rigid processes and structures that do not easily allow for rapid adaptation. The application of UTAUT and DAT could potentially enable traditional firms to address some of the technical issues associated with adopting technology. The prior literature emphasizes the importance of reducing user fears about new technology, facilitating its smooth adoption within an organization, and fostering a culture of ongoing learning and adaptation. While adapting mechanisms are important to organizations, recent research indicates that current efforts may require re-examination (Raisch, 2008). Due to its multi-level nature, ambidexterity is a potential area for social science investigation at all organizational levels (Birkinshaw & Gupta, 2013). Strategic actions and decisions are necessary to develop a comprehensive understanding of organizational behavior across different levels of analysis (to fill research gaps) and to develop a holistic view of organizational behavior (Wilden et al., 2018). The incorporation of dynamic ambidexterity, born global experiences, and techniques used by gradual internationalizes may assist firms in developing the ability to simultaneously maintain innovation while remaining agile in response to an ever-changing environment. The purpose of this study is to integrate the Dynamic Ambidexterity Theory (DAT) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to assess the extent to which digital technologies influence the strategic decisions and sustainability of international firms. The purpose of this study is to identify how firm-specific and user-specific characteristics influence the rate and degree of adoption and internalization of digital technologies by born global and gradual internationalizes. The purpose of this study is to determine how digital sophistication affects strategic decision-making by identifying organizational and individual factors that contribute to digital transformation and increased competitiveness.

Literature Review

Strategic Actions are a Critical Variable for The Sustainable

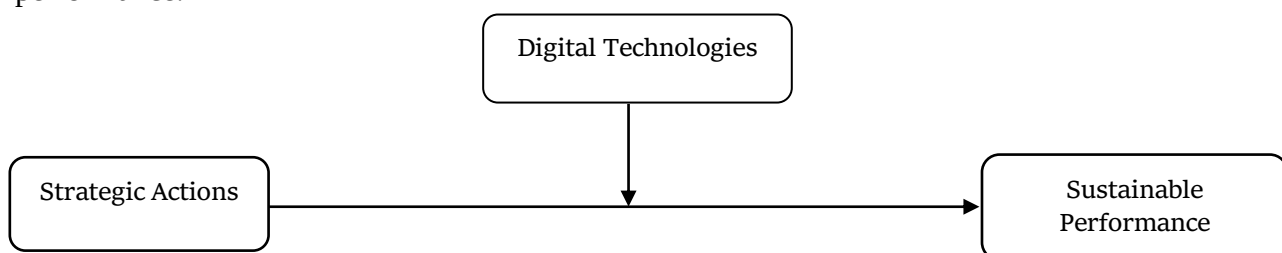
According to Bor et al. (2024), Strategic Actions can help support innovation projects through five forms of activity namely, signposting, demanding, incubating, orchestrating, and integrating. Indicating is an action that sets marketing objectives for the organization. Aspects of this activity involve identifying appropriate resources that meet sustainability criteria (e.g., decreasing plastic usage). As part of this activity, strategic actions affect customer behavior at the time of purchase and, thus, demonstrate that they impact each and every business subsystem. A high level of demand for a product may signal a new market trend or rapid customer adoption of technology, thereby influencing purchasing behavior and prompting businesses to react. Da Costa and Miragaia (2024) state that incubating involves testing pilot studies and experimenting with ideas. The incubation process uses data from previous tests to achieve environmentally friendly outcomes. Developing new materials may enhance manufacturing efficiency and create an eco-friendlier production line, resulting in a more sustainable production chain (Tankosić et al., 2024). Orchestrating is another form of strategic activity where companies launch and manage their innovative projects. In this case, the focus is on managing those projects through suitable industrial partners/suppliers to achieve the goals. Innovation may also require collaboration with other industry players and/or research organizations (Castelblanco et al., 2024). These strategic actions support innovation and knowledge development in all components (materials and subsystems) of the enterprise. As such, they have significant implications for Born Global enterprises as well. Enterprises that quickly internationalized through digital platforms need to build enhanced capacity for internationalization, support innovation, and adapt rapidly to changing global market conditions. Conventional enterprises may face barriers to adopting new technologies and enhancing their competitive position through these strategic actions. A past approach focused on eliminating new-user fear, integrating new technology into existing processes, and fostering a culture of continuous learning and adaptability. Both born-global and traditional internationalizing enterprises require strategic action. Strategic action provides the foundation for innovation, technology adaptation, and sustained success. Incorporating strategic action within an organization could help adapt to future changes in global markets, aiding in achieving long-term sustainability and competitive advantage. By creating competitive advantages and taking strategic initiatives to improve performance while responding to changing marketplace conditions, it is also possible. There has been extensive research conducted on the relationship between performance and business strategic action, employing various theoretical frameworks to understand the complex relationships involved (Posen et al., 2018; Wei et al., 2025; Kai et al., 2026). Typically, if a firm's performance does not meet expectations, it will implement additional strategic initiatives to improve performance. The purpose of these initiatives is to improve performance and rectify poor performance. Poor performance may encourage strategic innovation and change, prompting organizations to search for alternative methods (Kotiloglu et al., 2021). It is reasonable to conclude that there is a connection between performance and strategic decision-making. To minimize the risks of failure, small businesses with limited resources often eliminate high-risk actions once they experience underperformance. Limited financial resources and perceived risk levels play major roles in how an organization responds to subpar performance. Potential results of the literature include: Strategic activities foster innovation, which is necessary for adjusting to evolving marketplaces. The previously discussed activities help improve performance and enhance the organization's innovative capabilities (Wang et al., 2025). Once performance begins to fall short of expectations, a firm should focus on strategic efforts designed to transform its organization. Strategic decision-making involves innovation, resource configuration, and attention to supply chain management. There exists evidence of a relationship between resources and strategic activities. Companies with limited financial resources may utilize radical innovations to improve performance and expand strategic options (Manthiou et al., 2025). Companies that engage in strategic activities designed to facilitate technological innovation and integration may compete in global marketplaces. As per above discussion the following hypothesis is formulate.

H1: The strategic actions have positive relationship on the sustainable performance.

Mediation Role of Digital Technology

Digital technology has an extraordinary effect on modern society, especially in networks of information, which generate new behaviors that ultimately enhance both individual and organizational dynamics (Escofet, 2020). Additionally, the extensive use of digital technology has increased involvement, dissemination, and access to information across various aspects of modern society. Digital technology has dramatically affected the competitive landscape for businesses. The barrier to entry in many sectors has been greatly diminished by the use of digital technology, which has generated much higher levels of competition and imitation (Bansal et al., 2024). One aspect of digital technology has created research setting in which one can analyze its implications while investigating the relationship between digitalization and innovation. Firm technology enhances production, performance, and capabilities when combined with human capital (Mouazen et al., 2025). Advanced digital technologies negatively affect company dynamics and undermine value during decision-making. The dramatic influence of digital technology will affect a firm's competitive abilities. The significance of this is that many organizations are working diligently to survive and expand (Khodakivska et al., 2023). Firms need to understand decision-making processes and strategies for internationalizing to develop competitive advantages within markets. The majority of the literature focused on internationalization processes via exporting (Brown & Mawson, 2016). Utilizing digital technology could transform a firm's internationalization process and create new marketing and sales avenues in developing markets. Moreover, complex technologies can help firms expand their international operations by providing faster, more efficient methods for processing information. In resource-poor settings, digital technologies are necessary for organizations that have rapidly internationalized to participate in global marketplaces. Digital technologies provide effective global customer interaction and presence. Digital technologies assist born global in overcoming challenges associated with rapid internationalization, including high costs and logistical complexity, thereby expanding their global reach (Coad et al., 2021). On the other hand, Gradual Internationalizes benefit from digital technology and grow progressively. Digital solutions enable organizations to manage better their operations, communications, and supply chain relationships (Teruel et al., 2022). By leveraging digital technology, Gradual Internationalizes can respond to changing global marketplace dynamics and remain competitive with more agile competitors. Digital technology integration significantly affects the internationalization efforts of businesses worldwide and Gradual Internationalizes (Zaid et al., 2025). Digital technologies are essential for organizations seeking to compete globally, as they can improve market access, reduce costs, and enhance operational capabilities. Governments must foster an environment that promotes technological advancement, boosting enterprises' global competitiveness (Himani Srihita et al., 2025). Implementing digital technology is crucial for establishing strategies for global and multinational enterprises (Secinaro et al., 2025). This technology enables them to overcome progressive obstacles and logistical challenges. Digital platforms enable organizations to enter markets and leverage sophisticated marketing channels, enhancing client engagement. For enterprises with longer internationalization procedures, embracing digital technology offers significant advantages despite delayed growth. As per above discussion the following hypothesis is formulated.

H2: The Digital technologies has positive moderate relation among the strategic action and sustainable performance.



Conceptual Framework

Methodology

This research evaluates the influence of strategic actions on sustainable performance in small and medium enterprises (SMEs) in Pakistan. Digital Technology is a moderator for this research. The methodology used for the analysis is based on methods employed by previous authors in their multidisciplinary studies, as reported in papers published by F. Saddique & N Mushtaq et al. (2020 to 2026). The first employee questionnaires were distributed to employees of SME companies operating in Pakistan. A total of 400 employee questionnaires were delivered, but only 240 were returned.

Table 1: Variables, Sample Items and Reference

Variable	Items	Reference
Strategic actions	5	(Yun et al., 2024).
Sustainable Performance	5	Maletic et al., 2015)
Digital technologies	4	(Fahad et al., 2023)

The data in Table 2 show that 400 respondents completed the questionnaire, yielding an overall response rate of 240. Of these 400 respondents, 180 were male, and 60 were female. Regarding the respondents' age, they were grouped into four categories. As illustrated in Table 2, the largest group was respondents aged 26-40, with 111 respondents. In addition, Table 2 shows that, based on qualifications, the respondents could be placed into one of four categories. Specifically, the largest group of respondents had completed their education at the University level (115 respondents), while the smallest group was those still studying for Matric (21 respondents). Finally, based on work experience, the respondents could also be grouped into four different categories. Consistent with this classification, the largest group of respondents had 6 or 10 years of work experience, totaling 111, and the smallest group had less than a year of work experience, totaling 37.

Table 2: Sample Distribution

	Characters	F
Gender	Male	180
	Female	60
	Total	240
Ages	Less Than 25 Years	30
	From 26 to 40	111
	From 40 to 55	40
	Above 55	59
	Total	240
Qualification	Matric	21
	Intermediate	69
	Graduate	115
	Post Graduate	35
	Total	240
Experience	Below One Year	37
	1 - 5 years	55
	6-10 Years	101
	Above 10 years	47
	Total	240

The reliability test of each scale was examined using Cronbach's alpha. See table 3. All the above values are greater than 0.70, indicating that the measurements were accurate and acceptable for future research.

Table 3: Reliability Analysis

Variable	Cronbach's Alpha
Strategic actions	0.72
Sustainable Performance	0.73
Digital technologies	0.78

Correlation Analysis

Table 4 illustrates the associations among the factors in this study. Strategic actions are significantly and moderately correlated with sustainable performance ($r = 0.278$, $p = 0.00$). They are moderately and significantly correlated with digital technologies ($r = 0.274$, $p = .000$). In addition, the association between sustainable performance and digital technologies is moderate and statistically significant ($r = 0.289$, $p = .000$).

Table 4: Correlation Analysis

Variable	1	2	3
1. Strategic actions	1		
2. Sustainable Performance	0.278**	1	
3. Digital technologies	0.274**	0.289**	1

** Correlation is Shown Significant at 0.01 level, *Correlation is Significant at 0.05 level

Regression Analysis

Table 5 demonstrates the basic regression analysis performed to determine the impact of strategic action on sustainable performance. The model is fit since the ANOVA sig value is $0.00 < 0.05$. The R-squared value of 0.129 indicates that a one-unit change in strategic action results in a 12.9% change in sustainable performance. The coefficient's p-value is 0.00, which is less than 0.05, indicating a significant association. The value of B is 0.252, indicating that strategic action affects sustainable performance. Hence, Hypothesis 1 is supported.

Table 5: Model between strategic action and sustainable performance

Variable	R ²	B	t	Sig
Strategic actions	0.129	0.252	8.89	0.000
Sustainable Performance				
Digital technologies				

Dependent Variable: Sustainable Performance * $p < 0.05$.

Moderation-Analysis

Table 6: Moderation-Analysis

Variables	B	R ²	P
Strategic Action (SA)	0.289	0.179	***
Digital Technologies (DT)	0.190	0.081	***
SAx DT	0.050	0.123	***

Note: Dependent Variable = Sustainable Performance

The results in Table 6 show that strategic actions affected sustainable performance ($p < .01$, $\beta = .289$), accounting for $R^2 = .179$. Additionally, as indicated by the beta coefficient, we find that digital technologies have a similar positive impact on sustainable performance ($p < .01$, $\beta = .190$), but to a lesser degree ($R^2 = .081$). Thus, there was an additional statistically significant interaction effect ($\beta = .05$, $p < .01$) for the product of the two variables (strategic action * digital technology), indicating that digital technologies

moderated the relationship between strategic action and sustainable performance. As such, the accepted hypothesis H2.

Discussion

According to Bor et al. (2024), Strategic Actions can help support innovation projects through five forms of activity namely, signposting, demanding, incubating, orchestrating, and integrating. Indicating is an action that sets marketing objectives for the organization. Aspects of this activity involve identifying appropriate resources that meet sustainability criteria (e.g., decreasing plastic usage). Da Costa and Miragaia (2024) state that incubating involves testing pilot studies and experimenting with ideas. The incubation process uses data from previous tests to achieve environmentally friendly outcomes. Developing new materials may enhance manufacturing efficiency and create an eco-friendlier production line, resulting in a more sustainable production chain (Tankosić et al., 2024). Orchestrating is another form of strategic activity where companies launch and manage their innovative projects. In this case, the focus is on managing those projects through suitable industrial partners/suppliers to achieve the goals. Innovation may also require collaboration with other industry players and/or research organizations (Castelblanco et al., 2024). These strategic actions support innovation and knowledge development in all components (materials and subsystems) of the enterprise. As such, they have significant implications for Born Global enterprises as well. Strategic action provides the foundation for innovation, technology adaptation, and sustained success. Incorporating strategic action within an organization could help adapt to future changes in global markets, aiding in achieving long-term sustainability and competitive advantage. By creating competitive advantages and taking strategic initiatives to improve performance while responding to changing marketplace conditions, it is also possible. There has been extensive research conducted on the relationship between performance and business strategic action, employing various theoretical frameworks to understand the complex relationships involved (Posen et al., 2018). Typically, if a firm's performance does not meet expectations, it will implement additional strategic initiatives to improve performance. The purpose of these initiatives is to improve performance and rectify poor performance. Poor performance may encourage strategic innovation and change, prompting organizations to search for alternative methods (Kotiloglu et al., 2021). The previously discussed activities help improve performance and enhance the organization's innovative capabilities (Wang et al., 2025). Once performance begins to fall short of expectations, a firm should focus on strategic efforts designed to transform its organization. Strategic decision-making involves innovation, resource configuration, and attention to supply chain management. There exists evidence of a relationship between resources and strategic activities. Companies with limited financial resources may utilize radical innovations to improve performance and expand strategic options (Manthiou et al., 2025). Companies that engage in strategic activities designed to facilitate technological innovation and integration may compete in global marketplaces. Digital technology has an extraordinary effect on modern society, especially in networks of information, which generate new behaviors that ultimately enhance both individual and organizational dynamics (Escofet, 2020). Advanced digital technologies negatively affect company dynamics and undermine value during decision-making. The dramatic influence of digital technology will affect a firm's competitive abilities. The significance of this is that many organizations are working diligently to survive and expand (Khodakivska et al., 2023). Firms need to understand decision-making processes and strategies for internationalizing to develop competitive advantages within markets. The majority of the literature focused on internationalization processes via exporting (Brown & Mawson, 2016). On the other hand, Gradual Internationalizes benefit from digital technology and grow progressively. Digital solutions enable organizations to manage better their operations, communications, and supply chain relationships (Teruel et al., 2022). By leveraging digital technology, Gradual Internationalizes can respond to changing global marketplace dynamics and remain competitive with more agile competitors. Digital technology integration significantly affects the internationalization efforts of businesses worldwide and Gradual Internationalizes (Zaid et al., 2025). Digital technologies are essential for organizations seeking to compete globally, as they can improve market access, reduce costs, and enhance operational capabilities. Governments must foster an environment that promotes technological advancement, boosting enterprises'

global competitiveness (Himani Srihita et al., 2025). Implementing digital technology is crucial for establishing strategies for global and multinational enterprises (Secinaro et al., 2025). This technology enables them to overcome progressive obstacles and logistical challenges. Digital platforms enable organizations to enter markets and leverage sophisticated marketing channels, enhancing client engagement. For enterprises with longer internationalization procedures, embracing digital technology offers significant advantages despite delayed growth as per above discussion, all the hypothesis are accepted.

Conclusions

In this study, we aim to investigate how technology influences digital-based strategic decisions and activities that ultimately influence a firm's sustainable performance. So, that the result of study represented that strategic action has positive influence on the sustain performance in SME of Pakistan. Furthermore, the digital technologies has positive moderate role in strategic actions and sustainable performance to attain the competitive advantages. The study helpful for policy makers, business owners and SME managers.

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Data availability: The statistics supporting the outcomes of this research are accessible upon reasonable request from the first author.

Declarations

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Competing interest: The authors have no competing interests to declare.

References

1. Anjum, R., Daud, S., Bhatti, G. A., & Saddique, F. (2026). Evaluation of AI-based mental health interventions using the grey relational analysis. *Grey Systems: Theory and Application*, 16(1), 75-90.
2. Aziz, B., Latif, F., & Fatima, N. (2025). The impact of digital financial services on consumer purchase decisions: a study of mobile wallet usage in online marketing campaigns. *Pakistan Journal of Social Science Review*, 4(8), 59-80.
3. Bansal, S., Kumar, S., Ali, S., Singh, S., Nangia, P., & Bamel, U. (2025). Harnessing digital finance for sustainability: An integrative review and research agenda. *Research in International Business and Finance*, 74, 102682.
4. Birkinshaw, J., & Gupta, K. (2013). Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives*, 27(4), 287-298.
5. Bor, S., O'Shea, G., & Hakala, H. (2024). Scaling sustainable technologies by creating innovation demand-pull: strategic actions by food producers. *Technological Forecasting and Social Change*, 198, 122941.
6. Brown, R., & Mawson, S. (2016). Targeted support for high growth firms: Theoretical constraints, unintended consequences and future policy challenges. *Environment and Planning C: Government and Policy*, 34(5), 816-836.
7. Buckley, P., Kandemir, D., Liu, S. Y., & Gençtürk, E. F. (2024). An internalization perspective on subsidiaries' reputation and its impact on subsidiaries' marketing advantage: The moderating roles of resources and autonomy. *Journal of Business Research*, 175, 114565.
8. Bullini Orlandi, L., Bottura, M., Veglianti, E., & Zardini, A. (2025). Less is more: digital and physical sustainability shortage impact on entrepreneurial intention. *International Entrepreneurship and Management Journal*, 21(1), 44.

9. Castelblanco, G., Guevara, J., Mangano, G., & Rafele, C. (2024). Financial system dynamics model for multidimensional flexibility in toll road PPPs: a life-cycle analysis. *Construction management and economics*, 42(9), 802-821.
10. Chiu, W., Won, D., & Bae, J. S. (2024). Symmetric and asymmetric modeling to examine individuals' intention to follow fitness YouTube channels: an integrated perspective of the UTAUT2 and UGT. *International Journal of Sports Marketing and Sponsorship*, 25(4), 777-801.
11. Coad, A., Segarra-Blasco, A., & Teruel, M. (2021). A bit of basic, a bit of applied? R&D strategies and firm performance. *The Journal of Technology Transfer*, 46(6), 1758-1783.
12. Cozzolino, A., & Verona, G. (2024). Decision tree for adaptation after radical changes: linking dynamic capabilities, ambidexterity, and strategic alliances. *Journal of Management and Governance*, 28(3), 745-769.
13. da Costa, C. D., & Miragaia, D. A. (2024). Implementation of actions by higher education institutions to stimulate sport entrepreneurship. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 34, 100485.
14. Escofet, A. (2020). Service-learning and digital technologies: a possible relationship? *RIED-Revista Iberoamericana de Educacion a Distancia*, 23(1), 169-182.
15. Himani Srihita, R., Goli, G., M, R., & Gobinath, R. (2025). Transformative dynamics of the gig economy: Technological impacts, worker well-being and global research trends. *International Journal of Engineering Business Management*, 17, 18479790241310362.
16. Jawad, M., Muhammad, K. K., & Latif, F. (2025). Impact of Fintech Innovations on Consumer Trust and Brand Loyalty in Digital Marketing Ecosystems. *Research Consortium Archive*, 3(4), 1916-1932.
17. Kai, M., Xu, Q., Sibte Ali, M., Bhat, M. A., & Rehman, A. (2026). Digitalization and institutional quality as drivers of global value chains: evidence from ASEAN using CS-ARDL Analysis. *Humanities and Social Sciences Communications*, 13(1), 119.
18. Khan, K. N. (2025). Psychological capital to innovation from digital technology to cyberloafing in Pakistani universities. *International Journal of Applied Mathematics*, 38(7s), 722-745.
19. Khan, K. N., Anjum, S., Abbas, M. M., & Jabeen, A. (2024). Unlocking Teacher's Innovative Work Performance with Idiosyncratic Deals. The Parallels Mediating Models of Pakistani Universities. *International Journal of Social Science Archives (IJSSA)*, 7(2).
20. Khan, K. N., Shah, M. H., & Saddique, F. (2025). Innovative Work Behaviour Amid Faculty Shortage: The Role of Idiosyncratic-Deals, Digital Technology and Perceived Leadership Support. *Journal of Posthumanism*, 5(4), 978-992.
21. Khodakivska, V. U., Prystupa, L., Ivanyshyna, O., Panura, I., & Tuchak, T. (2023). Implementation of digital technologies in Public Administration. *Revista de la universidad del Zulia*, 14(39), 295-312.
22. Klyver, K., & Nielsen, S. L. (2024). Preparedness shapes tomorrow: crisis preparedness and strategies among SMEs amid external crises. *Entrepreneurship & Regional Development*, 36(9-10), 1363-1384.
23. Kotiloglu, S., Chen, Y., & Lechler, T. (2021). Organizational responses to performance feedback: A meta-analytic review. *Strategic Organization*, 19(2), 285-311.
24. Maletic, M., Maletic, D., Dahlgaard, J., Dahlgaard-Park, S. M., & Gomišcek, B. (2015). Do corporate sustainability practices enhance organizational economic performance?. *International Journal of Quality and Service Sciences*, 7(2/3), 184-200.
25. Manthiou, A., & Kuppelwieser, V. (2025). An ethical triangulation approach to tourism. *Tourism Management*, 109, 105154.
26. Maroof, L., Basit, A., & Khan, K. N. (2022). Responsiveness of Banks' Stability Towards Peak and Trough Phases of Business Cycle: A Comparative Analysis of Islamic Banks and Conventional Banks. *COMSATS Journal of Islamic Finance (CJIF)*, 7(2).
27. Maroof, L., Basit, A., & Khan, K. N. (2022). Responsiveness of Banks' Stability Towards Peak and Trough Phases of Business Cycle: A Comparative Analysis of Islamic Banks and Conventional

- Banks. *COMSATS Journal of Islamic Finance (CJIF)*, 7(2).
28. Mazzoni, L., & Sedita, S. R. (2025). Unpacking the drivers of the socio-environmental sustainability of new ventures: insights from innovative digital start-ups in Italy. *International Entrepreneurship and Management Journal*, 21(1), 16.
 29. Mouazen, A. M., Hernández-Lara, A. B., Chahine, J., & Halawi, A. (2025). Triple bottom line sustainability and Innovation 5.0 management through the lens of Industry 5.0, Society 5.0 and Digitized Value Chain 5.0. *European Journal of Innovation Management*, 28(5), 1965-2005.
 30. Mushtaq, F. S. U. N. N., & Ali, B. L. A. (2023). Implementation of digitalization supply chain helps in gaining of competitive advantages as mediating role in the supply chain performance in construction organization in Pakistan. *Journal of Humanities*, 1(01), 14-27.
 31. Mushtaq, N., & Khattak, A. N. (2026). Adoption of Solar Energy Sources and Sustainable Performance for Environment in Power Sector of Pakistan: An Empirical Analysis Based on Mediation Model of Green Innovation. *The Critical Review of Social Sciences Studies*, 4(1), 1690-1701.
 32. Mushtaq, N., & Khattak, A. N. (2026). Deployment of Wind Powered Resources and Ecologically Sound Performance in Pakistan's Energy Sector: An Empirical Research Based on the use of Green Technology Mediation Model. *Journal for Social Science Archives*, 4(1), 466–479. <https://doi.org/10.59075/jssa.v4i1.501>
 33. Mushtaq, N., Badar, M., Akhtar, F., Batool, F., Sandhu, M. E., Khan, M. I., ... & Zia, M. A. (2021). Efficiency of Power Distribution Companies in Pakistan (Application of Non-Parametric Approach).
 34. Mushtaq, N., Mirza, H. H., Rehman, S. U., & Saddique, F. (2020). Efficiency of Power Generation Companies in Pakistan: Application of Non-Parametric Approach. *Ilkogretim Online*, 19(4), 3486-3504.
 35. Mushtaq, N., Saddique, F., Abbas, Z., & Nawaz, M. (2023). How important is Efficiency in any Organization? "Estimating the Efficiency Reform of Power Distribution Companies in Punjab Province, Pakistan" (LESCO, FESCO & IESCO). *Traditional Journal of Law and Social Sciences*, 2(01), 44-59.
 36. Nawaz, M., Khan, S. A., Rana, S. L., & Saddique, F. (2020). Role Of Human Resource Best Practices To Improve Quality Education Of Pakistani Schools. *International Journal of Management (IJM)*, 11(11).
 37. Naz, F., Manzoor, A., Khan, K. N., & Ali, L. (2021). Islamic Equities Volatility and US Economic Influence: Case of Emerging Market. *COMSATS Journal of Islamic Finance (CJIF)*, 6(2).
 38. Nwagwu, F. S. N. M. U., & Naeem, A. R. (2024). *Traditional Journal of Law and Social Sciences*.
 39. Nwagwu, U., Niaz, M., Chukwu, M. U., & Saddique, F. (2023). The influence of artificial intelligence to enhancing supply chain performance under the mediating significance of supply chain collaboration in manufacturing and logistics organizations in Pakistan. *Traditional Journal of Multidisciplinary Sciences*, 1(02), 29-40.
 40. Peñarroya-Farell, M., & Miralles, F. (2021). Business model dynamics from interaction with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 81.
 41. Posen, H. E., Keil, T., Kim, S., & Meissner, F. D. (2018). Renewing research on problemistic search—A review and research agenda. *Academy of Management Annals*, 12(1), 208-251.
 42. Raisch, S. (2008). Balanced structures: Designing organizations for profitable growth. *Long Range Planning*, 41(5), 483-508.
 43. Saddique, F., & Khan, M. I. (2026). Impact of Adoption of Artificial Intelligence in Sustainable Supply Chain Performance in Manufacturing Organization of Pakistan: The Mediating Role of Supply Chain Integration. *The Critical Review of Social Sciences Studies*, 4(1), 1763-1776.
 44. Saddique, F., & Khan, M. I. (2026). Unlock the Sustainable Supply Chain Performance Through Artificial Intelligence and Moderator Digital Leadership in Pakistan Context. *Journal for Social Science Archives*, 4(1), 500–511. <https://doi.org/10.59075/jssa.v4i1.504>
 45. Saddique, F., Khan, K. N., Joyia, S. Z., & Jabeen, A. (2024). Impact of internet of things on

- sustainable supply chain performance: the empirical parallel mediation models. *Pakistan Islamicus (An International Journal of Islamic & Social Sciences)*, 4(02), 76-89.
46. Saddique, F., Khan, K. N., Joyia, S. Z., & Jabeen, A. (2024). Impact of internet of things on sustainable supply chain performance: the empirical parallel mediation models. *Pakistan Islamicus (An International Journal of Islamic & Social Sciences)*, 4(02), 76-89.
 47. Saddique, F., Mushtaq, N., Abbas, Z., & Nawaz, M. (2023). Creative performance of healthcare professionals (nurses) in hospitals Lahore, Pakistan. *Traditional Journal of Law And Social Sciences*, 2(01), 60-72.
 48. Saddique, F., Mushtaq, N., Hasan, R., Rehman, Z. U., & Ali, M. (2022). Access and Secure Storage Based Block Chain Scheme with IPFS Implemented in Electronic Medical Record in Lahore, Pakistan. . *Netw. Commun. Syst. JNACS*, 5(4).
 49. Saddique, F., Mushtaq, N., Imran, Z., Nawaz, M., & Usman, M. (2021). Impact of Green Supply Chain Management Practices on Environment Performance and Competitive Advantage.
 50. Saddique, F., Patel, K. R., Niaz, M., Chukwu, M. U., & Nwagwu, U. (2023). Impact of supply chain transformation on supply chain performance: the empirical study that bases on mediating role of supply chain resilience on construction organization on Pakistan. *Asian Journal of Engineering, Social and Health*, 2(9), 1072-1086.
 51. Saddique, F., Ramzan, B., Sanyal, S., & Alamari, J. (2023). Role of digital leadership towards sustainable business performance: A parallel mediation model. *Journal of Infrastructure, Policy and Development*, 7(3), 2416.
 52. Scholar, F. S. P. D., Fatima, H., Hassan, M., Scholar, N. M. P. D., & Asghar, K. A. (2023). Impact of ethical leadership on creative work performance: the empirical mediating roles of work engagement and attitude toward performing wells in construction organizations in Pakistan.
 53. Secinaro, S. F., Oppioli, M., Demarchi, L., & Novotny, O. (2025). Bridging borders and boundaries: the role of new technologies in international entrepreneurship and intercultural dynamics. *International Entrepreneurship and Management Journal*, 21(1), 46.
 54. Shah, M. H. (2025). Strengthening Innovative Work Behavior via Psychological Capital: A Moderated Mediation Framework. *FishTaxa-Journal of Fish Taxonomy*, 36(1s), 90-101.
 55. Sharif, S., Lodhi, R. N., Iqbal, K., & Saddique, F. (2022). Gender disparity in leadership boosts affective commitment and tacit knowledge sharing about libraries. *International Journal of Organizational Analysis*, 30(5), 1212-1234.
 56. Sharif, S., Lodhi, R. N., Siddique, F., & Munir, M. A. (2021). Service quality of higher education digital library (DL) and loyalty behaviors: Testing the mediating role of student satisfaction. *Library Philosophy and Practice*, 1-22.
 57. Shinta, D., Khan, K. N., & Nadeem, M. (2025). Evaluating Generative AI Initiatives in Human Resources: Multiple Criteria Decision Analysis. *Management Science and Business Decisions*, 5(2), 5-19.
 58. Tankosić, J. V., Ignjatijević, S., Ivaniš, M., Mihajlović, M., Avakumović, J., & Puvača, N. (2024). Local Cheese: Factors Affecting Consumption and PLS-Path Modelling Study. *Journal of the Hellenic Veterinary Medical Society*, 75(1), 6815-6822.
 59. Teruel, M., Coad, A., Domnick, C., Flachenecker, F., Harasztosi, P., Janiri, M. L., & Pal, R. (2022). The birth of new HGEs: internationalization through new digital technologies. *The Journal of Technology Transfer*, 47(3), 804-845.
 60. Unlocking Innovativeness through the Idiosyncratic Deals of University Teachers in Pakistan. The Empirical Mediating Role of Attitude Toward Performing Wells. (2024). *International Journal of Human and Society*, 4(1), 1227-1236. <https://ijhs.com.pk/index.php/IJHS/article/view/506>
 61. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view1. *MIS quarterly*, 27(3), 425-478.
 62. Wang, K., Guo, M., Di Sarno, L., & Sun, Y. (2024). Decoding BIM adoption: a meta-analysis of 10 Years of research—exploring the influence of sample size, economic level, and national culture. *Buildings*, 14(4), 920.

63. Wei, Y., Ali, M. S. E., & Bhat, M. A. (2025). Exploring the impact of digital technology, circular technology and public management on environmental sustainability in emerging economies. *Scientific Reports*.
64. Yun, J. J. J., Zhao, X., Ahn, H., & Park, K. (2024). Business Model as a Nudge to Match between Technology and Market in the Ai Industry-Under the Bounded Rationality of Open Innovation Dynamics: Inter-Rationality. *Available at SSRN 5034965*.
65. Zaid, M., Farooqi, R., & Azmi, S. N. (2025). Driving sustainable supply chain performance through digital transformation: the role of information exchange and responsiveness. *Cogent Business & Management*, 12(1), 2443047.