Innovation as Mediation: Entrepreneurship and Business Growth in Saudi SMEs

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ABSTRACT
Saudi Arabia's past economic policies have been successfully based on petro revenue, but the rapidly changing geopolitical landscape and high volatility of global energy markets have escalated the need for economic diversification. Along these lines, Small and Medium Enterprises (SMEs) are given a crucial role in the national development plan (Vision 2030) as enablers of sustainable growth, job creation, and private sector development. This study investigated how innovation acted as a mediating variable between entrepreneurial orientation (risk taking and proactiveness) and the business growth of Saudi SMEs. The study generated results using Structural Equation Modeling (SEM) and mediation analyses based on a quantitative survey of 87 small to medium business owners and managerial staff from different industry sectors, as well as in-depth qualitative interviews with 14 industry owners and eight policymakers. Results of the study indicated that innovation significantly mediated the relationship between entrepreneurial orientation and business growth ($\beta = 0.52$, $p < .01$) with indirect effects supported by bootstrapping procedures. The direct paths between risk-taking and proactiveness to innovation were also significant (risk-taking $\beta = 0.38$; $p < .01$, and proactiveness $\beta = 0.45$; $p < .01$). Qualitative findings, together with the quantitative results in this study, provide insights into key structural barriers such as access to finance, regulatory complexity, digital skills gaps, and weak markets. The study concludes with policy recommendations for specific regions based on a comparative analysis of SME ecosystems in the region and internationally, and makes evidence-based contributions to the existing knowledge on entrepreneurship-based economic diversification in rentier state settings.
KEYWORDS: Innovation, entrepreneurial orientation, SMEs, Saudi Arabia, mediation analysis,

INTRODUCTION

Over the last 20 years, economies globally have experienced a paradigm shift towards more digitized and knowledge-intensive industries and markets that are more entrepreneurial and dynamic, outpacing older growth models based on natural resources (Hanelt et al., 2021; Wang, et al., 2020). The shift from being a natural resource-based economy to a diversified economy is a challenge for many countries but also an unprecedented opportunity for development. This is most clearly manifested in Saudi Arabia, one of the world's largest economies driven by petro-money which has built an extensive welfare state and modernized its infrastructure, but now faces the vulnerability of being too dependent on a single commodity that is subject to energy transition, price volatility, and changing geopolitics (Alshammari, 2023).

The Vision 2030 framework, constituted in 2016 by Crown Prince Mohammed bin Salman, is a complete programmatic solution to these structural shortcomings. In essence, Vision 2030 strives to ensure that the private sector contribute about 65% of the Gross Domestic Product against an average of 40% currently and have SMEs at the forefront of the change. The proposition is strong: SMEs are the biggest employers in KSA with a share of nearly 70% in the labor market. Saudi Arabia is one of the youngest nations in the Arab region with approximately 63% of its population aged less than 30 years old. This means that the ability of these SMEs to integrate new entrants into the economy will make a pivotal difference in ensuring social stability and economic sustainability in the coming decades (Cahyadi et al., 2024).

Despite their macroeconomic importance, Saudi SMEs face a myriad of structural challenges that can impact their growth and value creation capabilities. Access to institutional financing is limited due to collateral requirements and the danger aversion approach (Bresnahan et al., 2002). Moreover, with regulatory systems under constant reform, compliance burden takes up undue management time in smaller firms. Further, in the transition to digital business models, many SMEs do not yet have the needed technological and organizational skills (Duan et al., 2023; Xiancong & Guohong, 2021). Lack of human capital resource exacerbates the challenges faced by entrepreneurial ventures, largely attributable to the traditional education system in the country which is tuned to preparing students for the public sector employment market instead of independent entrepreneurship. In this context, innovation has specific theoretical and practical implications. It is a key mechanism illustrated in entrepreneurship literature that underpins the transformation of entrepreneurial attitudes to tangible business outcomes (Wang et al., 2019).

The theory guiding this study is that entrepreneurial orientation (the behavioral attitudes towards risk-taking and proactively seeking out market opportunities) is not directly linked to the growth of businesses but is instead mediated by innovation. Without systematic innovation, firms with an entrepreneurial culture are likely to make little progress in developing sustainable competitive advantage over their competitors. However, innovation without entrepreneurial motivation can also lead to incremental innovation as opposed to value creation which is adequate to differentiate the product in the market in an interesting way (Asheim & Coenen, 2005; Jacobides et al., 2018). In the background of these studies, this research was conducted to address three gaps. One, the empirical evidence, particularly concerning innovation mediated entrepreneurship, is mainly from the context of East Asian and Western European economies while very little empirical evidence exists on the institutional and cultural background of the economies of the Gulf Cooperation Council (GCC) countries. Two, prior research has often focused on the outcomes of innovation over the process by which entrepreneurial dispositions lead to commercial success, thus clouding the path to the effects of entrepreneurial disposition. Three, methodological designs in this area have often adopted a single research approach. The current study proposes to overcome these limitations via a mixed methods approach that integrates SEM with in-depth qualitative data gathered from interviews. The results thus assist theory building in relation to entrepreneurship-growth relationships and can add to the increasing body of empirical evidence in understanding how to design policy interventions for SMEs in the Kingdom of Saudi Arabia.

MATERIALS AND METHODS

This research applied a mixed methods design with two data sources, viz., a survey and interviews (Wang et al., 2019; Cahyadi et al., 2024). The choice of methods was theoretically guided: using SEM enables statistical power to test mediating mechanisms, but semi-structured interviews offer context-rich information that is required to interpret the understanding of structural coefficients in the lived experience of Saudi SME practitioners and the context, or policy environment, that influences their decisions.

The quantitative sample comprised 87 sole proprietors, co-founders, general managers, and senior operational managers from SMEs registered with the General Authority for Small and Medium Enterprises (Monsha'at) in the Kingdom of Saudi Arabia. Inclusion criteria were as follows: businesses active for three years with 5-249 full-time employees based in manufacturing, retail, information technology, or professional services. Contact was made with respondents through professional networks, Chamber of Commerce membership directories, and by asking initial contacts to introduce the researchers to other respondents. The sample was representative of at least four regions of the country viz., Riyadh, Jeddah, Dammam, and Tabuk.

Gender distribution of respondents was in line with the new labor market participation patterns pervasive of the Vision 2030 reforms, comprising 79% male and 21% female respondents, as compared to surveys done prior to 2019 that showed a much less inclusive representation. (57%) of the participants had undergraduate or postgraduate qualifications, while the rest had technical or professional qualifications. The top four sectors for distribution were manufacturing (28% of the workforce), professional and business services (26% of jobs), information and communication technology (24% of the workforce), and retail and wholesale trade (22%). The survey instrument was reviewed by a panel consisting of three academic economists and two Monsha'at policy officers, considering the SME context in Saudi Arabia. Entrepreneurial orientation was measured using a nine-item scale (Cronbach's α of .84) that reflected the proactiveness of the strategic orientation and risk-taking propensity, following the dimensions conceptualized in Wang et al. (2019).

Innovation was measured with a seven-item scale with Cronbach's α coefficient measuring .81, corresponding to the conceptualization presented by Cahyadi et al. (2024), and Mao et al. (2021) which assessed the level of innovation in products, processes, and organizations. To capture business growth, a six-item composite ($\alpha = .78$) was used that covered revenue trajectory, job growth, market share changes, and digital channel usage in keeping with the digital transformation indicators highlighted by Xiancong and Guohong (2021)and Firk et al. (2022). Responses to all items were solicited on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). To validate the measurement properties of each latent construct, confirmatory factor analysis (CFA) was conducted before structural modelling. Convergent validity was tested using the Average Variance Extracted (AVE) and Composite Reliability (CR) with the cutoff points of AVE ≥ 0.50 and CR ≥ 0.70. The Fornell-Larcker criterion was used to evaluate discriminant validity. The structural model was analyzed using maximum likelihood estimation in AMOS 26.0. The fit of the models was assessed using a set of complementary indices: χ^2/df ratio, Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Following the bootstrapping procedure for social science research (Wang et al., 2023), indirect effects

were estimated with 5,000 bootstrap trials and the subsequent calculation of 95% confidence intervals by applying the bias-correcting method (Ross et al., 2018).

Qualitative data was gathered through 22 semi-structured interviews, 14 of which were interviews with SME business owners, and eight interviews were conducted with policymakers from Monsha'at, the Ministry of Commerce, and the Saudi Industrial Development Fund. Each interview lasted an average of 52 minutes and was conducted in Arabic and English, with translation verified by bilingual research assistants. The interview protocol focused on several areas of perceived barriers to growth, as well as subjective assessments of innovation capacity, financing and regulatory hurdles, and the effectiveness of support mechanisms from Vision 2030. Interviews were recorded with the interviewees' individual consents and transcribed verbatim and analyzed thematically using NVivo 14 with initial inductive coding followed by mapping of the themes from the interview data on the quantitative constructs. Participant data were anonymized using an alphanumeric coding system.

RESULTS AND DISCUSSION

The measurement variables of all latent constructs were found to be acceptable before the relationships in the structural model were estimated. To be considered acceptable, the composite reliabilities had to be greater than 0.70, as shown in Table 1, the values obtained in this study were in the range of 0.841 to 0.867. Variance extracted had an average of 0.518 to 0.567. Inter-construct correlations ranged from moderate to strong but were not greater than the square roots of the respective AVE values, providing support for discriminant validity according to Fornell-Larcker's procedure. Such indicators of the quality of measures justify the addition of a step for estimating structural models. The overall fit of the structural model was satisfactory: $\chi^2/df = 2.14$, CFI = 0.963, RMSEA = 0.048 (90% CI [0.031, 0.065]), and SRMR = 0.052. All indices were found to be within the desired parameters, and the RMSEA was well below the contemporary benchmark threshold of 0.06, indicating satisfactory representation of the observed data structure.

Table 1 Reliability, Validity, and Intercorrelation Statistics for Latent Constructs (N = 87)

Construct	α	CR	AVE	EO	RT	PR
Entrepreneurial Orientation	0.84	0.867	0.567	–		
Risk-Taking	0.79	0.841	0.518	0.621**	–	
Proactiveness	0.81	0.854	0.541	0.634**	0.587**	–
Innovation	0.81	0.862	0.556	0.612**	0.543**	0.598**
Business Growth	0.78	0.843	0.534	0.574**	0.489**	0.521**

Note. Values represent standardized scores. **p < .01, *p < .05.

The overall theoretical assumption of this study (institution of the mediating role of innovation between entrepreneurial orientation and business growth), was well-supported by the empirical findings herein. The direct path from entrepreneurial orientation to innovation was

found to be positive and significant (β = 0.412, SE = 0.078, t = 5.28, p < .001), as was the path from innovation to business growth (β = 0.524, SE = 0.091, t = 5.76, p < .001). The direct path from entrepreneurial orientation to business growth with the inclusion of the mediator in the model remained significant yet drastically lower in magnitude (β = 0.198, p = .006) than its estimate without the mediator (β = 0.389, p < .001). This partial mediation process suggests that a substantive direct pathway from entrepreneurial orientation to growth remains for mediation effects which points to the theoretical works that highlight process and capability-based mechanisms whereby entrepreneurial values are created and demonstrates that a large share of the entrepreneurial orientation-growth relationship is mediated (Ma et al., 2020; Wang et al., 2025).

With 5,000 re-sample trials within the bootstrap-based mediation testing, all 95% confidence intervals for the indirect effects excluded 0, thus offering strong evidence for significant mediation. The indirect effect of risk-taking on business growth through innovation was 0.198 (95% CI [0.089, 0.307]), and the indirect effect of proactiveness on business growth through innovation was 0.234 (95% CI [0.134, 0.349]). Proactiveness had a greater indirect effect on innovation than risk-taking, implying that the ability to be forward-looking and reach for potential opportunities before competitors may be more generative of innovation than the attitude of taking risks. This discovery is consistent with Chen et al.'s (2025) finding that planning cognitive attention in the future is a prerequisite for successful digital and innovative transformation, and Wang's et al. (2020) finding that temporal focus is equated with an attentional process in strategic attention allocation.

Table 2 Structural Model Path Coefficients and Hypothesis Testing Results

Path	B	SE	t	p	Decision
H1: EO → Innovation (direct)	0.412	0.078	5.28	< .001	Supported
H2: Innovation → Business Growth	0.524	0.091	5.76	< .001	Supported
H3: EO → BG (direct, without mediator)	0.389	0.083	4.68	< .001	—
H3: EO → BG (direct, with mediator)	0.198	0.072	2.75	.006	Partial Mediation
Risk-Taking → Innovation	0.381	0.069	5.52	< .001	Supported

Proactiveness → Innovation	0.448	0.074	6.05	< .001	Supported

Note. Values represent standardized scores. **p < .01, *p < .05.

Disaggregated path estimates showed that entrepreneurial orientation variables positively and significantly influenced innovation. Risk-taking orientation had an equalized effect of 0.381 ($p < .001$), and proactiveness showed a greater effect of 0.448 ($p < .001$) which further supported the relative importance of proactive strategic behavior in the production function of innovation. These results enrich and complement the conceptual framework established by Wang et al. (2019) which indicated that proactively oriented businesses can partly counteract the less advanced R&D capabilities that exist at the operational activity level of SMEs in Saudi Arabia where market information gaps and resource constraints for small businesses are large. Further, proactive entrepreneurs may be better able to find good market niches, modify offshore technologies to meet local needs, and bring together social capital networks as alternatives to formal innovation investing (Asheim & Coenen, 2005; Zhong et al., 2022).

Thematic analysis of the data obtained from the 22 interviews supported the patterns found in the quantitative data. SMEs have always portrayed innovation as improvisatory problem-solving—process changes in service delivery, digital communication technologies, product adaptation to local culture, and creative efficiencies—in operation. A sole proprietor in the professional services sector expressed this direction: "We do NOT need a research team, we just need to think differently about each engagement!" This conceptualization aligns with the process innovation framework established by Mao et al. (2021) and the merchants' tradition of "iterative" business adaptation described by Ren and Cheng (2025). However, policymakers commonly use more formal definitions of innovation, such as patents, product launches, and technology licensing, and this definitional gap may reflect a lack of perception of innovation in industries where it is more likely to be creative or adaptive. When owners and policymakers perceive the growth barriers similarly, they also find a consistent ranking of barriers to growth (Table 3) with certain differences in the emphasis placed on these barriers. Equally, as was found on the owners' side, access to finance was the most problematic aspect ($M = 4.21$), corroborating the findings of Bresnahan et al. (2002) related to the structural financing disadvantage of smaller businesses. Regulatory burden was rated as the most severe ($M = 4.12$), suggesting the need for more awareness among policymakers of the need for policy reform priorities. Both groups rated digital skills deficiencies highly ($M = 3.65$ and 4.05, respectively) which is in line with other digital transformation barriers mentioned in the existing SME digital transformation literature (Xiancong & Guohong, 2021). Duan et al., 2023; Soluk & Kammerlander, 2021).

Table 3 Perceived barriers to SME Growth: Comparative Perspectives of Business Owners and Policy Makers

Barrier Theme	Owners M (SD)	Policymakers M (SD)	Severity	Policy Response Suggested

Access to Finance	4.21 (0.61)	3.98 (0.58)	High	Collateral, SME loan products
Regulatory Burdens	3.87 (0.72)	4.12 (0.55)	High	One-stop licensing platforms
Digital Skills Gap	3.65 (0.68)	4.05 (0.49)	Moderate–High	Digital upskilling programs
Market Access	3.54 (0.74)	3.72 (0.63)	Moderate	Export facilitation, B2B portals
R&D Investment	3.31 (0.79)	3.88 (0.57)	Moderate	Innovation grants, co-investment
Talent Retention	3.44 (0.81)	3.56 (0.66)	Moderate	SME career incentive schemes

Note. Values represent standardized scores. **p < .01, *p < .05.

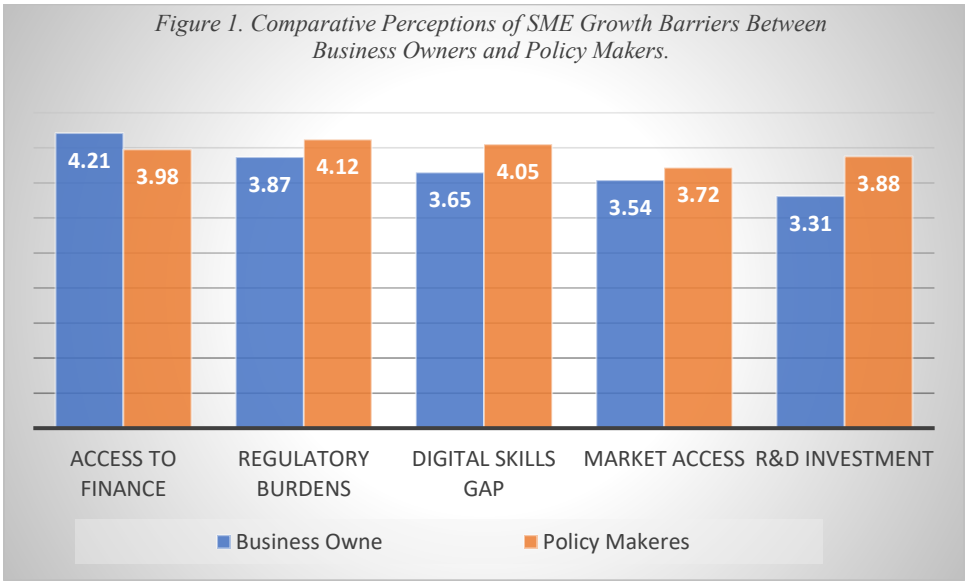

Figure 1. Comparative Perceptions of SME Growth Barriers Between Business Owners and Policy Makers.

Data indicates theoretical significance between owners' and policy makers' notions of R&D investment barriers (owner M = 3.31, policy maker M = 3.88). Systemic under-investment in developing formal innovation infrastructure was perceived as a significantly higher barrier by policymakers, reflecting the micro-institutional awareness that there may be under-investment at the system level of formal innovation infrastructure that is not directly observed by the

alternative SMEs, perhaps because alternative investment by SME owners is through working with informal paths to innovation. This result aligns with Xiong and Zhang (2022) which captured examples of how SMEs within constrained R&D environments tend to rely on behavioral rather than technological innovation to overcome obstacles, and Wang and Zou (2018) which found that regional innovation spaces create a buffer effect between industrial policy measures and their impact.

Some interesting observations emerged from the qualitative data gathered from a comparative international perspective. Entrepreneurs and policymakers knowledgeable about innovation platforms, mentorship networks, and export facilitation programs often note their successful operations in the context of SMEs in South Korea, Singapore, and Malaysia, especially in the co-investment model between the public and private sectors (Yu et al., 2024). Four of the eight policymakers in this study identified the recent innovation-linked lending criteria by the Saudi Industrial Development Fund as a promising mechanism, although there were concerns about implementation fidelity and access to micro and small businesses. Such comparative observations are in keeping with the systematic literature on national innovation systems (Asheim & Coenen, 2005) and support the significance of knowledge-based regional development frameworks in the Saudi SME policy context.

The mediation results have implications beyond the direct effect framework which has been the dominant emphasis of past studies on the entrepreneurship-growth relationship in the Saudi context. In research on digital transformation and corporate innovation, Wang et al. (2021) and Tang et al. (2022) investigated the mechanism by which orientations lead to outcomes beyond the orientation-outcome association. Based on the current results, it seems that it is quite possible that SME support interventions focusing on the innovation capacity are more successful in achieving growth outcomes than those that focus only on entrepreneurial attitude. Schiuma, et al. (2022). .also suggested that entrepreneurial attitudes alone are insufficient to drive measurable results toward digital transformation—the point of considering these implementation programs within a business's design.

It is important to give special credit to the moderating context of culture. The idea that national culture influences the innovation-competitiveness nexus was shown to be applicable by Cahyadi et al. (2024) which proposed that characteristics of national culture, such as power distance, collectivist orientation, and high uncertainty avoidance (in Hofstede's tradition), can give rise to a unique mix of dynamics in the entrepreneurial orientation-innovation pathway. Qualitative data in this study indicated that in the Saudi SME context, proactiveness often manifests in terms of relation-oriented networks - not in standard market research - and that the factor of family and community reputations influences the willingness to take risks, not solely the financial factor. As noted by Fang et al. (2024) and Yue et al. (2024), cultural specificities call for possible refinement and extension of entrepreneurial orientation constructs applicable to non-Western institutional contexts. The overall findings of the present study justify the shift in Saudi Arabia's SME development policy from a growth-maximizing focus to an innovation-enabling focus. If innovation is the link between entrepreneurial energy and entrepreneurial and business growth, then interventions to boost SMEs' innovative capacity (such as the provision of digital infrastructure, skill development initiatives, regulatory streamlining, and risk-reducing financing mechanisms) can be expected to have a multiplicative effect on entrepreneurial and business growth. Thus, this study provides empirical support for the Vision 2030 SME agenda and success factors for implementation, which are essential to achieve the transformative Vision goals.

CONCLUSION

This study aimed to determine whether there is a relationship between entrepreneurial orientation and business growth and to analyze the mediating role of innovation. The views compiled from the 87 survey respondents and 22 qualitative interviews all arrive at the same conclusion: innovation makes possible the leap from the entrepreneurial philosophies of risk-taking and proactiveness to tangible metrics of business growth, hence it is an important and substantial intervener. The study outcomes have theoretical and practical implications. Theoretically, this study contributes to the growing body of literature on entrepreneurship-growth mechanisms that serve to confirm the significance of the innovation-mediation model in the highly unique institutional setup of a Gulf state—specifically for a rentier economy transitioning towards reforms. Accordingly, the superior role proactiveness plays in fostering innovation within this framework highlights the need to consider the cultural, regulatory, and capital market dimensions that can restrict or facilitate entrepreneurial actions differently. As for the implications of the findings, on the practical side, results convey a clear message in terms of policy design: policies that focus on training entrepreneurs' attitudes will have a limited effect on the growth of SMEs in Saudi Arabia, while those deployed to build the innovation capacities of entrepreneurs may be more effective.

Further, qualitative data outcomes revealed that the main structural barriers to access to finance, lack of digital skills, and regulatory compliance costs to start a business slow down the innovation-based growth pathway, thus limiting the impact of entrepreneurship. Increasing the potentially available capacity of the innovation channel, at least partly, via changes in policies that explicitly tackle these bottlenecks, will unleash the potential growth of entrepreneurs and small- and medium-sized enterprises (SMEs) that currently lie dormant in the Kingdom. An analysis of comparative international experience indicates that the best-performing economies which have stimulated the growth of their SME sectors, have done so over an extended period by investing in national innovation infrastructure, quality financial institutions, and a regulatory system that reduced the cost and complexity of SME efforts in compliance. Saudi Arabia has the financial capability, institutional set-up, and policy directives for similar large-scale investments as part of Vision 2030 to integrate these changes.

Recommendations

It is recommended that the model presented in this study be further tested in future studies to determine if it is equally valid on larger samples in Saudi Arabia (more than 200 responses per group) and for the same model to be tested across sectors, firm sizes, and geographic regions in the Kingdom of Saudi Arabia.

Comparative studies across GCC member countries would provide valuable insights into the moderating effects of differences in SME policy frameworks, regulatory environments, and cultural contexts on the moderation-innovation mechanism. It is recommended that policymakers analyze economies that have experienced successful diversification transitions through SMEs (such as, South Korea, Malaysia, Portugal, and Chile) to isolate lessons for the Saudi context (Asheim & Coenen, 2005; Cahyadi et al., 2024). It is also recommended that some key segments of the innovation finance community, such as VC investors, academic innovation ecosystem actors, and commercial bank lending officers, whose views would prove useful to understanding the systemic difficulties in innovation finance be taken into consideration by policymakers to ensure that changes are commensurate with the needs of the

entrepreneurs and the country. Finally, the scope of the concept of innovation must be rather general, and further research could productively break down innovation into its sub-segments: product, process, service or organizational innovation, and explore how each of these influences in different ways and is susceptible to different kinds of policy interventions in the Saudi context.

Limitations and Scope for Future Research

The present study has a few limitations. The cross-sectional nature of the quantitative component makes the causal inferences tentative. Further, the sampling frame though ensured sector diversity lacks the representativeness of the Saudi SME population; therefore, results are not necessarily representative of micro-enterprises, family-owned businesses in traditional sectors, or SMEs in rural and semi-urban areas beyond the Kingdom's key commercial centers. The over-representation of males also reflects male predominance in the labor market as of now, which hampers understanding of the unique journey of feminist entrepreneurs—those who are fast becoming a key force in the development of the SME sector.

REFERENCES

1. Alshammari, K. H. (2023). The potential impacts of digital transformation on organizations. Amazonia Investiga, 12(64), 9-18
2. Asheim, B. T., & Coenen, L. (2005). Knowledge bases and regional innovation systems: Comparing Nordic clusters. Research Policy, 34(8), 1173–1190.
3. Bresnahan, T. F., Brynjolfsson, E., & Hitt, L. M. (2002). Information technology, workplace organization and the demand for skilled labor: Firm-level evidence. Quarterly Journal of Economics, 117(1), 339–376.
4. Cahyadi, A., Marwa, T., Wahyudi, T., Muizzuddin, Sulastri, Maulana, A., & Szabó, K. (2024). Exploring the mediating role of innovation in the nexus between national culture and sustainable competitiveness. Administrative Sciences, 14(12), 310. https://doi.org/10.3390/admsci14120310
5. Chen, Q., Dong, T., & Shi, P. (2025). How executive team attention allocation affects corporate AI applications? A perspective of integrated temporal and spatial focus. Nankai Business Review, 28, 1–25.
6. Chen, Y., He, X., & Xu, S. (2023). Family control and corporate digital transformation. Management Journal, 45, 99–115.
7. Duan, H., Yang, X., & Dong, F. (2023). Digital transformation, financing constraints, and corporate innovation. Statistics and Decision, 39, 164–168.
8. Fang, Q., Wen, C., & Xu, H. (2024). Long-term oriented culture, performance pressure and corporate innovation: Evidence from China. PLoS ONE, 19, e0302148.
9. Firk, S., Gehrke, Y., Hanelt, A., & Wolff, M. (2022). Top management team characteristics and digital innovation: Exploring digital knowledge and TMT interfaces. Long Range Planning, 55, 102166.
10. Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. Journal of Management Studies, 58(5), 1159-1197
11. Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. Strategic Management Journal, 39, 2255–2276.

12. Ma, J., Huang, Z. L., & He, X. (2020). How does family business strike a balance between long-term orientation and short-term goal? Based on the perspective of allocation of entrepreneurship. Nankai Business Review, 23(6), 124-135.
13. Mao, Y. H., Kang, X. T., & Fang, Y. (2021). Research on the impact of innovation climate and knowledge management on innovation performance–From the perspective of internal collaborative network in New R & D Institutions. Studies in Science of Science, 39(3), 519–529
14. Ren, L., & Cheng, Y. (2025). Sustainable development of traditional business culture: Merchant guild culture and enterprise innovation. Sustainability, 17, 853. https://doi.org/10.3390/su17030853
15. Ross, A. C., Simons, L. E., Feinstein, A. B., Yoon, I. A., & Bhandari, R. P. (2018). Social risk and resilience factors in adolescent chronic pain: examining the role of parents and peers. Journal of Pediatric Psychology, 43(3), 303-313.
16. Schiuma, G., Schettini, E., Santarsiero, F., & Carlucci, D. (2022). The transformative leadership compass: six competencies for digital transformation entrepreneurship. International Journal of Entrepreneurial Behavior & Research, 28(5), 1273-1291.
17. Soluk, J., & Kammerlander, N. (2021). Digital transformation in family-owned Mittelstand firms: A dynamic capabilities perspective. European Journal of Information Systems, 30(6), 676-711
18. Tang, X., Gao, X., Zhao, T., & Ding, S. (2022). Executive team heterogeneity and corporate digital transformation. China Soft Science, 10, 83–98.
19. Wang, F., Wang, Y., & Liu, S. (2021). Research on the influence of online media reports on earnings management based on the perspective of abnormal investor attention. Nankai Business Review, 24, 116–129.
20. Wang, G., Li, L., & Ma, G. (2019). Entrepreneurial business tie and product innovation: A moderated mediation model. Sustainability, 11(23), 6628. https://doi.org/10.3390/su11236628
21. Wang, H., Feng, J., Zhang, H., & Li, X. (2020). The effect of digital transformation strategy on performance: The moderating role of cognitive conflict. International Journal of Conflict Management, 31(3), 441-462. https://doi.org/10.1108/IJCMA-09-2019-0166
22. Wang, L., Zhang, H., & Qi, Y. (2024). Collaborative culture and dynamic adjustment of corporate tax burden. Journal of World Economy, 47, 150–182.
23. Wang, Q., Zhou, Y., Zhao, X., & Zeng, Y. (2025). Collaborative culture, product quality, and firm performance. Economics Letters, 246, 112073.
24. Wang, S., Li, X., Li, Z., & Ye, Y. (2023). The effects of government support on enterprises' digital transformation: Evidence from China. Managerial and Decision Economics, 44(5), 2520-2539.
25. Wang, X., & Zou, H. (2018). Effect mechanism of industrial policies on innovation performance of wind power enterprises—Considering time lag and regional innovation environment. R&D Management, 30, 33–45.
26. Wu, F., Hu, H., Lin, H., & Ren, X. (2021). Enterprise digital transformation and capital market performance: Empirical evidence from stock liquidity. Management World, 37(7), 130–144.
27. Xiancong, W., & Guohong, Z. (2021). Does media coverage supervise large shareholders' illegal reduction? Foreign Economics & Management, 43(11), 86-103

28. Xiong, Y., & Zhang, Q. (2022). R&D investment incentives of new energy vehicles' non-subsidized policies in China—Difference analysis based on the regional innovation atmosphere. R&D Management, 34, 81–94.
29. Yu, Y., Xu, N., & Wen, X. (2024). Research on the impact of entrepreneurial orientation on digital transformation of enterprises. Science Research Management, 45, 81–91.
30. Yue, L. Q., Zheng, J., & Mao, K. (2024). Firms' rhetorical nationalism: Theory, measurement, and evidence from a computational analysis of Chinese public firms. Management and Organization Review, 20(2),, 161–203.
31. Zhong, X., Chen, W., & Ren, G. (2022). The impact of corporate social irresponsibility on emerging-economy firms' long-term performance: An explanation based on signal theory. Journal of Business Research, 144, 345–357.