Universiti Teknologi MARA
Cawangan Perlis
Jurnal Intelek

Volume 21 Issue 1 (February) 2026

Impact of Entrepreneurial Bricolage, Ecological Innovation, Entrepreneurial Mindset, and Green Entrepreneurial Orientation on Digital Entrepreneurial Intention

Ali Raza[1*], Jati Kasuma Ali[2], Awang Rozaimie[3]
[1] Department of Digital Development, Bank AlBilad, Riyadh, Saudi Arabia
[2,3] Faculty of Business and Management, Universiti Teknologi MARA, Sarawak Branch, Kota Samarahan, 94300 Sarawak, Malaysia

*Authors' Email Address: *[1]alliraaza@gmail.com, [2]jati@uitm.edu.my, [3]awgrozaimie@uitm.edu.my*

Received Date: 13 October 2025
Accepted Date: 29 November 2025
Revised Date: 26 December 2025
Published Date: 31January 2026

*Corresponding Author

ABSTRACT

This study analyses digital entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurial orientation in relation to the digital entrepreneurship intentions associated with small and medium-sized enterprises (SMEs) in Saudi Arabia. It examines the impact of the accelerated growth of the digital economy and a national agenda for economic diversification and sustainability on SME owners' readiness to adopt and implement digital business solutions. With empirical support from 190 SME owners and managers, the results indicated that entrepreneurial bricolage and the entrepreneurial mindset can enhance digital entrepreneurial intention via facilitation of resourceful innovation to address constraints experienced in early-stage digitally based activities and by fostering proactive resiliency to engage more effectively with digital opportunities. On the other hand, ecological innovation and green entrepreneurial orientation show an insignificant level of direct influence on digital entrepreneurial intention, indicating that sustainability practices have provided limited motivation to start digital entrepreneurship, especially in the Saudi SME context. The outcomes of this research have implications for policymakers, educators, and practitioners regarding how they can better enhance resourcefulness and mindset to effectively support digital entrepreneurship activities with more meaningful connections to sustainability in their initiatives. This multifaceted picture of digital entrepreneurship in digitally immature, sustainability-driven emerging markets, hence, provides a holistic lens on the underlying factors.

Keywords: *Digital Entrepreneurial Intention, Entrepreneurial Bricolage, Ecological Innovation, Green Entrepreneurial Orientation*

INTRODUCTION

In the contemporary context, entrepreneurship is closely interwoven with digitalisation and sustainability, implying that for most small and medium-sized enterprises (SMEs), the landscape has become ever more dynamic and complex (Khan, 2022). The development and activation of Saudi SME sectors is crucial for enhancing economic development and diversification. In Saudi Arabia, digital entrepreneurship is growing rapidly (Alferaih, 2022). The change is driven by the development of

E-ISSN 2231-7716
DOI: http://10.24191/ji.v21i1.9196

digital tools and platforms, as well as a growing awareness of sustainable business practices and the urgent need for more creative solutions to resource and environmental challenges. Therefore, it is more important to know the factors that motivate the intention of digital entrepreneurship among Saudi SMEs to facilitate a greater build of a vibrant and sustainable entrepreneurial ecosystem (Alsaiary et al., 2024).

Entrepreneurial bricolage, defined as the capability of the entrepreneurs to creatively use and recombine limited resources in innovative ways, plays an important role in this regard (Baker & Nelson, 2005). The ability to work with what is at hand, manifested in resource-constrained environments that many SMEs face, allows the entrepreneurs to overcome a variety of obstacles, respond quickly to market changes, or, through digital tools, boost operational efficiency and stimulate business growth. More recently, there is a tendency to focus on ecological innovation, or eco-innovation, which involves various initiatives proven successful in integrating sustainability aspects within entrepreneurship itself (Ragmoun, 2024). Through ecological innovation, new green products, services, and processes are developed to make them more environmentally friendly in the long term and achieve business growth in line with sustainable development goals. Integrating ecological sustainability and digital innovation has significant potential for SMEs in Saudi Arabia to be not just early movers but also drivers towards contributing positively to the country's environmental as well as economic goals (Alghamdi, 2023).

The entrepreneurial mindset is an embodied psychological and cognitive stance that includes a set of tangible, strategic approaches and layers on opportunity recognition, proactiveness, and resilience, as well as toleration of risk (Raza et al., 2025). An entrepreneurial mindset is essential in providing people with mental structures to contemplate things from a different angle, particularly within digital change and ambiguity. The entrepreneurial mindset fosters a proactive approach towards new and emerging digital tools and fosters an eagerness to explore innovative business methods, which is beneficial for hundreds of SMEs in the rapidly evolving digital landscape (Bakry et al., 2025). Further, the concept of green entrepreneurial orientation—a distinct strategic profile focusing on environmentally friendly and sustainable modes of operation—can help entrepreneurs to couple their business goals with ecological mandates. This orientation affects not only the sustainability performance of enterprises but also their willingness and intention to adopt digital innovations that are environmentally friendly (Alshebami et al., 2024).

The essence of these conflicting constructs is based on entrepreneurial self-efficacy, which refers to the confidence entrepreneurs possess in their capacity to effectively perform various entrepreneurial tasks, such as identifying opportunities, managing risks, and implementing innovations. This pivotal psychological mechanism of self-efficacy mediates the relationship between entrepreneurial behaviour and intentions, in turn enhancing the prospects for SMEs to participate deeply in digital entrepreneurship (Alshebami, 2023). It enables entrepreneurs to reduce resource constraints, technology requirements, and market risks. Entrepreneurs with high levels of entrepreneurial self-efficacy can bridge the infrastructural and knowledge deficiencies in the Saudi SME landscape by adeptly utilising bricolage, ecological innovation, and a green entrepreneurial orientation, thereby facilitating their engagement in digital entrepreneurship initiatives (Alshebami et al., 2023).

The study is particularly pertinent in light of Saudi Vision 2030 and the Kingdom's current objectives to reduce its reliance on fossil fuels and embrace digital transformation. Policies to promote entrepreneurship, sustainability, and digital adoption both enhance opportunities for and complicate the lives of SMEs (Qasim et al., 2025). Understanding how entrepreneurial bricolage and ecological innovation interact with mindset and orientation, facilitated by self-efficacy to evoke the pathways to digital entrepreneurial intentions, is crucial. This comprehension is essential for intervening in education, training, resource allocation, and policy to improve the ability of SMEs to sustainably innovate digitally (Alshebami et al., 2023).

LITERATURE REVIEW

The Theory of Planned Behaviour (TPB), coined by Ajzen (1991), prepares the baseline for an empirical assessment of these proposed four dimensions regarding their effects on digital entrepreneurial intention in Saudi SMEs, and thus, offers potential academic development and contributions to practical entrepreneurship development policies in Saudi Arabia as well. Basically, this conceptualisation is grounded in the TPB's three factors: attitude, subjective norms, and perceived behavioural control, as illustrated in Figure 1. Hence, Abdelwahed et al. (2022) indicated the need to investigate comprehensively the multiple interactions among these elements to better understand the underlying mechanisms behind digital entrepreneurship in emerging economies, which operate within resource-constrained and sustainability-aware business settings. The study of the multifaceted effect of these measures underscores the important ways to enhance SMEs' competitiveness and sustainability in a more digital and green global economy. This interconnected framework is multilateral in nature and incorporates elements such as entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurship orientation, specifically within the context of SMEs' digital entrepreneurship intentions in Saudi Arabia. This framework posits that digital entrepreneurial intentions (i.e., commitment or plans to initiate digital ventures) are not shaped in separation; rather, they emerge through intricate intertwining perseverance, ecological sustenance awareness, mental orientation, and planned ecosystem dedication. Given the academic research indicating that SMEs face challenges related to capital, technology, and knowledge, green-driven digitality leverages bricolage ingenuity, which is rooted in an entrepreneurial mindset that motivates both ecological innovation and a strategic green journey orientation (Alzamel, 2024).

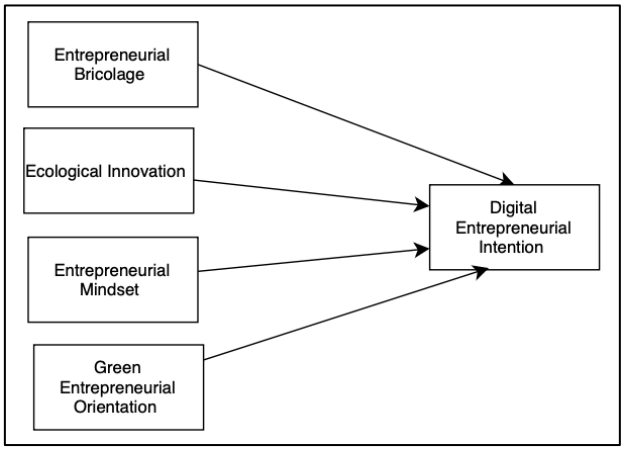

Figure 1: Conceptual framework of the study

Entrepreneurial Bricolage

Entrepreneurial bricolage refers to the improvisational and adaptive use of existing limited resources to attend to new problems and opportunities (Baker & Nelson, 2005), especially in resource-constrained spaces such as SMEs. It's about using what you have instead of waiting for the best resources. In most cases, bricolage is practised by SMEs in Saudi Arabia, which are usually capital-constrained and lacking in technical skills behind the concept of an innovation-driven approach being used to scale up their business otherwise (Albadry, 2025). Academic writings on entrepreneurial bricolage point out that, far from being merely a strategy of necessity for business longevity, the practice can play a role in corporate innovation and competitiveness arenas. For SMEs, the term means a way to outcompete on product/service/business process uniqueness through novel combinations of their resource base. The adaptability and innovation capabilities, which are absolutely essential in the ever-more dynamic markets where digital technology evolution and swift-changing customer behaviour impose a need for fast reaction with no investment luxury (Alsharif et al., 2021).

Although bricolage is often associated with improvised behaviour that seems risky, bricolage that draws on rapid environmental scanning and the creative management of uncertainty might develop organisational resilience. This approach can reduce the costs associated with operating under resource scarcity, exploit new opportunities in digital entrepreneurial activities, and enhance their ability to engage in digital entrepreneurship (Iqbal et al., 2025). Entrepreneurial bricolage is an essential enabler for digital entrepreneurial intention, which refers to the commitment or plan to create a venture using digital technologies. It enables Saudi SMEs to be more agile and digitally proactive rather than reactive. SMEs can incorporate digital tools innovatively and sustainably through bricolage, aligning the use of resources with economic objectives as well as environmental priorities (Fozia & Ranabahu, 2022).

In addition, entrepreneurial bricolage relates to resource-based view and dynamic capability theories. It is the formative element that shapes, from a contingency perspective, not only operational activities but also the strategic intentions of SMEs to take ownership and use the entrepreneurial form in their digital processes (AlMulhim et al., 2025).

In sum, the literature holds entrepreneurial bricolage as a fundamental mechanism that helps resolve resource restrictions, triggers continuous innovation, and generates digital entrepreneurship intentions for SMEs. Understanding the effect of entrepreneurial orientation on intentions towards digital entrepreneurship highlights its implications for helping SMEs in Saudi Arabia overcome challenges and exploit new opportunities (Babgi, 2023). Hence, entrepreneurial bricolage is hypothesised as follows:

H1: Entrepreneurial bricolage has a significant impact on digital entrepreneurial intention.

Ecological innovation

Eco-innovation, or ecological innovation, is the introduction of new or significantly improved products, processes, and practices that aim at preventing or radically reducing environmental impacts throughout the life cycle (Kahia et al., 2024). In Saudi Arabia, it has become mandatory for SMEs to shift towards ecological innovation due to global environmental challenges, including climate change, resource depletion, and pollution. This phenomenon has added to the demand on small and medium-sized enterprises (SMEs) to implement green practices in their business operations, not only to reduce the impact on the environment but also due to consumer preference for eco-friendly products and services (Kahia et al., 2023).

Literature refers to ecological innovation as a process that SMEs can use as a type of leverage to strengthen their competitive situation with positive environmental effects. Digital technologies complement such activities by enabling eco-innovation: precision farming and intelligent resource management, including waste reduction and energy efficiency (Islam, 2024). For example, in arid regions such as Saudi Arabia, digitalised eco-innovations like water-efficient irrigation systems with soil moisture sensors are used by the SMEs for better resource utilisation and prevention of soil degradation, thus mitigating environmental concerns. These innovations strive to incorporate business operations, local sustainable development objectives, and international environmental regulations (Ali et al., 2024; Wasiq et al., 2023).

Moreover, ecological innovation enhances digital entrepreneurial intent by creating a cognitive and branding dimension that fosters ecological awareness and commitment within the context of recognising entrepreneurial opportunities. Entrepreneurs are more likely to use digital tools to create environmentally responsible business models or solutions when they consider ecological innovation. The goal of attracting environmentally aware customers demonstrates how this sustainable perspective influences the digital transformation initiatives, opening the market and engaging environmental issues along with economic objectives (Chaaben et al., 2024).

Additionally, ecological innovation correlates with entrepreneurial self-efficacy, defined as the capacity of an entrepreneur to establish innovative, sustainable digital startups. Capacity for ecological innovation is assumed to generate self-efficacy in SMEs strong enough to overcome barriers that relate largely to scarce resources and technological adoption. More importantly, this self-efficacy mediates the positive impacts of ecological innovation on digital entrepreneurial intentions, incubating entrepreneurs to more effectively envision and pursue green digital ventures (Kahouli et al., 2022).

In general, eco-innovation is positively related to sustainability in SMEs; however, it also enhances digital entrepreneurship intention among Saudi Arabian firms. SMEs can enhance growth and sustainability by combining digital strategies with environmentally sound innovations, among other benefits. This blend of ecological and digital innovation is essential for SMEs addressing both environmental and technological challenges in the business landscape of KSA (Samargandi & Sohag, 2022). The ecological innovation is hypothesised as follows:

H2: Ecological innovation has a significant impact on digital entrepreneurial intention.

Entrepreneurial Mindset

An entrepreneurial mindset is a set of attitudes, behaviours, and skills that motivate people to identify unique opportunities, take risks, and create something new, mainly in the face of uncertainty in addition to limited resources. This includes elements of proactivity, resilience, creativity, tolerance of risk, and vision (Al-Ghazali et al., 2022). This mindset helps to spot the opportunities that others may miss, move quicker instead of waiting for perfect scenarios, and deal better with failures—learning experiences (Akram et al., 2024). It helps increase adaptability by allowing business owners to map strategies as per the situation or market trends rapidly.

Against the background of national digitalisation and economic diversification efforts, which are expected to benefit especially small- and medium-sized enterprises (SMEs) in Saudi Arabia, the development of entrepreneurial intent towards digital entrepreneurship is crucial: to induce entrepreneurs to creatively initiate and innovate with the use of digital tools and platforms irrespective of limited resources or infrastructural hurdles. Fostering an innovative culture through the entrepreneurial mindset enables SMEs to explore and invest in digital initiatives that can enhance the overall performance as well as the competitiveness of a business (Abdelwahed, 2023). It also encourages goal orientation and a long-term vision, which leads entrepreneurs to increasingly seek measurable results that will determine the paths they follow in their digital entrepreneurship. This clarity of purpose, combined with a proactive and steady-state perseverance, creates the informed continuity necessary for digital innovation to progress. It also enhances entrepreneurial self-efficacy, the attitudinal belief in one's capabilities to successfully execute a set of tasks necessary for business creation (Yang & Bentein, 2023), which is essential for reducing barriers intrinsic to the digital economy.

An entrepreneurial mindset is a combination of creative problem-solving and versatility, which is based on market trends in the digital world and enables SME owners to navigate these markets and technologies that are typically dominated by technology giants. In the rapidly evolving digital world, it is necessary to learn and adapt quickly (Alshagawi & Mabkhot, 2024). In light of the above discussion, an entrepreneurial mindset as a psychological and strategic precursor significantly influences digital entrepreneurial intention, stimulating motivation and self-efficacy in implementing digital business innovations appropriately among SMEs for sustainable scale-up growth and economic liberation within the Saudi environment (Akila, 2021). The entrepreneurial mindset is hypothesised as follows:

H3: Entrepreneurial mindset has a significant impact on digital entrepreneurial intention.

Green entrepreneurial orientation

The green entrepreneurial orientation (GEO) highlights a strategic construct derived from green sustainability entrepreneurship in the core activities of the businesses. GEO highlights the importance for Saudi Arabian SMEs to integrate environmental content into sustainability practices and product & service development, as well as in every other business decision and innovation (Abdelwahed et al., 2023). This orientation helps focus entrepreneurial efforts on global and national sustainability goals, allowing SMEs to minimise environmental impacts while aiming for competitive advantages and long-term viability. GEO is an inherent driver that triggers this proactiveness and a readiness to innovate in uncertain contexts with limited resources when it comes to green opportunities and innovations similar to the case of environmental sustainability (Al Halbusi et al., 2024).

GEO has been described as essential for promoting green innovation in the literature, by which SMEs come up with contemporary and recurring eco-friendly technologies, resource-efficient procedures, and sustainable business models. This emphasis on sustainability can improve the image of SMEs with increasingly eco-aware consumers and stakeholders, paving the way to new markets combining digital transformation with green responsibility (Al-Mamary, 2025). GEO serves as a source of inspiration for SME entrepreneurs to integrate digital solutions with green innovations, such as digital monitoring systems for energy efficiency or supply chain transparency, ensuring that ecological and business performance are mutually reinforcing (Alwakid et al., 2021).

GEO additionally provides a boon to entrepreneurial self-efficacy, which is the extent of confidence SMEs have in their ability to develop sustainable, innovative ventures. SMEs need this psychological empowerment to navigate the challenging environment of limited resources, market fluctuations, and technological usage, which in turn strengthens their intentions for digital entrepreneurship. Not only does this orientation contribute to the promotion of sustainable business, but it also enables SMEs for an emerging digital economy where both environmental performance and digital capabilities are ever more intertwined (Al-Swidi et al., 2025).

In the Saudi Arabian SME context, adopting a green entrepreneurial orientation is well-suited given national visions like the Saudi Vision 2030, focusing on economic diversification via sustainability and technological advancement. GEO empowers entrepreneurs with the mindset and approach to explore the integration of green and digital innovations, giving rise to intentions for starting digital ventures that support sustainability (Mabkhot et al., 2024). Therefore, green entrepreneurial orientation significantly moderates the relationship between environmental consciousness and digital opportunity recognition and exploitation: SMEs with higher levels of green entrepreneurial orientation are better able to reconcile these competing objectives, making their sustainable digital marketplace positions more stable (Ragmoun, 2024). Therefore, the green entrepreneurial orientation is hypothesised as follows:

H4: Green entrepreneurial orientation significantly influences digital entrepreneurial intention.

METHODOLOGY

This paper uses a quantitative research design to determine the effect of entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurial orientation on digital entrepreneurial intention in SMEs in Saudi Arabia. The primary data collection instrument used was a structured questionnaire, and the researcher himself completed the data collection. The target respondents were 190 SMEs in Saudi Arabia, selected through purposive sampling. The questionnaire items used in this study were borrowed from previous studies. Senyard et al. (2014) provided the questions for the entrepreneurial bricolage. The questions for the green entrepreneurial orientation were adapted from Muangmee et al. (2021). The survey by Cai and Li (2018) has been used to adapt questions related to ecological innovation. We took and adapted the questions for the entrepreneurial mindset from the study by Li et al. (2016). Likewise, the study also adapted the questions for entrepreneurial

self-efficacy from the study by Wang et al. (2020). Additionally, we adapted the questions for digital entrepreneurial intention from Nguyen & Nguyen's (2024) study.

RESULTS

Measurement model

This study tested the convergent validity, internal consistency, and discriminatory validity of the model through Smart PLS. For the adequacy of convergent validity testing, the average variance extracted (AVE) and indicators' outer loadings were examined. Composite reliability (CR) values were used to prove the internal consistency. The first step was to assess the convergent validity of constructs, which is a common method to measure the extent to which multiple indicators reflect a single latent variable having high variance in common. The assessment of the internal consistency was mainly based on the AVE, with 0.5 as a recommended threshold for convergence value; values above this level indicate satisfactory validity. Both AVE values exceeded 0.5 in the study, indicating adequate convergent validity. In addition, the factor loadings (with values above 0.5) confirmed a high association of items with their respective constructs, further supporting that the scale had excellent convergent validity. The study also assessed internal consistency, which determines how individual items of each construct gel with one another. Composite reliability values were all higher than the commonly accepted minimum thresholds of 0.6 to 0.7, indicating satisfactory reliability and internal consistency for the measurement scales that included both formative and reflective constructs (Hair et al.). Composite reliability values over 0.6 but under 0.9 are typically deemed acceptable, as mentioned in Table 1.

Table 1: Composite reliability values

		Loadings	Cronbach's alpha	Composite reliability	Average variance extracted
Entrepreneurial Bricolage			0.83	0.865	0.459
	EB 1	0.756			
	EB 2	0.803			
	EB 3	0.779			
	EB 4	0.815			
	EB 5	0.566			
	EB 6	0.548			
	EB 7	0.585			
	EB 8	0.473			
Ecological Innovation			0.773	0.78	0.521
	EI 1	0.742			
	EI 2	0.738			
	EI 3	0.71			
	EI 4	0.761			
	EI 5	0.65			
Entrepreneurial Mindset			0.767	0.769	0.682
	EM 1	0.816			
	EM 2	0.828			
	EM 3	0.833			
Green Entrepreneurial Orientation			0.798	0.799	0.553
	GEO 1	0.746			
	GEO 2	0.819			
	GEO 3	0.653			
	GEO 4	0.723			
	GEO 5	0.767			
Digital Entrepreneurial Intention			0.815	0.818	0.643
	DEI 1	0.787			
	DEI 2	0.818			
	DEI 3	0.818			
	DEI 4	0.784			

The Heterotrait-Monotrait (HTMT) ratio was used to test the discriminant validity for this study. Discriminant validity proves that a construct stands apart from the other constructs in the model. The literature does not provide specific benchmarks for discriminant validity, but a consensus is that minimally acceptable and desirable HTMT should not exceed 0.90, as highlighted in Table 2.

Table 2: Heterotrait-Monotrait (HTMT) ratio

	Digital Entrepreneuri-al Intention	Ecological Innovati-on	Entrepre-neurial Bricolage	Entrepre-neurial Mindset	Green Entrepreneuri-al Orientation
Digital Entrepreneurial Intention					
Ecological Innovation	0.646				
Entrepreneurial Bricolage	0.783	0.805			
Entrepreneurial Mindset	0.446	0.256	0.546		
Green Entrepreneurial Orientation	0.504	0.612	0.557	0.129	

Structural model

This study reveals the impact of entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurial orientation on digital entrepreneurial intention in small and medium-sized enterprises (SMEs) located in Saudi Arabia (Mabkhot et al., 2024). Entrepreneurial bricolage, unsurprisingly, is a salient, generative mechanism for seeding digital entrepreneurial intention due to the foundational role it plays in activating resource scarcity-driven SME entrepreneurs to creatively leverage few resources and enact digital ventures. In resource-constrained environments common to many Saudi SMEs, bricolage enables improvisation and innovation necessary for entrepreneurs to address barriers with respect to capital scarcity, technological underdevelopment, and market uncertainties (Alzamel, 2024). This flexibility and novel resource assembly deepen the confidence to pursue digital entrepreneurial activities, thus elevating the intention to engage with digital technologies proactively. Although entrepreneurial bricolage is considered an active approach in early-stage innovative entrepreneurship where limitations exist, it can also serve as an inherent resource used to tackle challenges and constraints (Satar et al., 2024). This mechanism contributes to reconceptualising bricolage as digital entrepreneur behaviour by connecting it with an environmental uncertainty driver of the theoretical lens from a dynamic capability perspective, focusing on change and innovation effort in existing business processes (Al Jameel & Adam, 2025). Table 3 outlines the decisions made in relationships.

Table 3: The Relationship between Investigated Constructs

	Original sample	Standard deviation	T statistics	P values	Results
Ecological Innovation -> Digital Entrepreneurial Intention	0.12	0.079	1.512	0.131	Insignificant
Entrepreneurial Bricolage -> Digital Entrepreneurial Intention	0.501	0.084	5.953	0	Significant
Entrepreneurial Mindset -> Digital Entrepreneurial Intention	0.127	0.059	2.166	0.03	Significant
Green Entrepreneurial Orientation -> Digital Entrepreneurial Intention	0.109	0.076	1.435	0.151	Insignificant

Similarly, the entrepreneurial mindset significantly impacts digital entrepreneurial intention by encouraging key perceptions and mental states necessary for identifying and leveraging digital opportunities. The entrepreneurship mindset develops resilience, proactiveness, creative problem-solving, and risk-taking in SME entrepreneurs to handle the intricacies of digital markets and technologies (Bakry et al., 2025). This attitude aligns with the nature of bricolage, as individuals are future-orientated, learn continuously, and persist in the face of setbacks—elements described as central to digital entrepreneurial engagement. According to Dote-Pardo et al. (2025), the investigated mediator construct, entrepreneurial self-efficacy, reveals the factors that translate motivation into specific

planned actions. Entrepreneurs possess sufficient confidence in this aspect, along with all other components of the mindset, to ensure its effectiveness. Therefore, the entrepreneurial mindset is a rooted cognitive and motivational core behind intentions for the innovative use of digital tools to grow and transform businesses (Hager et al., 2024).

DISCUSSION

In this study, ecological innovation and green entrepreneurial orientation were found to have no significant direct impact on digital entrepreneurial intentions among Saudi SMEs, despite the anticipated mediations. This is a significant result in that it indicates those sustainability-related practices and orientations are theoretically important but perhaps not yet sufficient to drive digital entrepreneurial intention among SMEs in Saudi Arabia (Al Koliby et al., 2024). The capability, resources, and incentive some SMEs lack to link ecological innovation directly with digital entrepreneurship in situ through time may also be a reason for limited direct effects (Yaseen et al., 2025). Though there is increasing national emphasis on sustainability realisation, like Saudi Vision 2030, environmental innovations may be more siloed or in their infancy and not yet fully integrated into the digital entrepreneur processes or intents of SMEs. Likewise, green entrepreneurial orientation, although strategic, is likely to play an indirect role through other psychological or structural factors in influencing digital entrepreneurial intention without exerting a direct influence on such outcomes. SMEs might see them as supplementary rather than central to digital entrepreneurship, or alternatively, green issues are not yet given their due importance within the frameworks of digital entrepreneurial decision-making (Mashhour, 2022).

These results suggest a need for further investigation of the various channels through which sustainability-oriented constructs influence digital entrepreneurial behaviour. This positive effect of entrepreneurial self-efficacy is partially mediated by the reputation and enabling effects, both mechanisms not captured in the direct effect models of the study in hand (Dote-Pardo et al., 2025). On the other hand, it is argued that a certain institutional environment or cultural factors and related capacity constraints to which Saudi Arabian SMEs are subject could delay the association between green commitments and digital entrepreneurship. These nuances give policymakers and supporting organisations directions for their programme designs to ensure the sustainability of digital innovation in SME development (Sulaiman et al., 2024).

The importance of entrepreneurial bricolage and mindset highlights the necessity of developing resourceful, innovative, and well-fortified epistemic lenses for SME enterprise entrepreneurs. Innovator bricolage skills that revolve around using creative methods of piecing together resources, improvising when necessary, and recombining existing elements into something new are reflected in the capacity-building efforts among entrepreneurs to execute digital ventures better (Alzamel, 2024). Similarly, by elevating the confidence of SME owners in digital entrepreneurship, training and mentoring programmes could aid in cultivating an entrepreneurial mindset dedicated to opportunity recognition, risk mitigation, and innovation. Scholars (cf. Iqbal et al., 2025) argue that transforming latent capabilities and attitudes into actual entrepreneurial intentions requires psychological empowerment through entrepreneurial self-efficacy.

The insights from this study indicate a need to focus on developing forms of support to help SMEs make better use of their resources and foster growth-orientated mindsets around innovation, creativity, and digital transformation at a strategic level in policy. Environmental sustainability, which is a national-level goal, is believed to be integral to innovation for ecological development; therefore, the incorporation of green entrepreneurial practices in the digital entrepreneur ecosystem of SMEs may require more concentrated efforts in facilitation, incentive creation, and awareness (Alfayyadh, 2024). To bridge this gap between sustainability aspirations and on-the-ground digital entrepreneurship, stakeholders need sustainably orientated green innovation frameworks that connect green innovation to the specific digital business models being served in given markets (Bakry et al., 2025).

Finally, this study contributes to the existing body of knowledge and provides a more comprehensive view of how different types of entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurial orientation may affect digital entrepreneurship intention in Saudi Arabian SMEs (Alriyami et al., 2025). This construct also shapes the digital entrepreneurial intentions of entrepreneurs by defining how their human capital, through a proactive, bricolage-orientated coping strategy, enables them to overcome constraints and embrace digital innovation. While ecological innovation and green entrepreneurial orientation are conceptually useful, their direct impact on these intentions is limited, indicating the need for further research and policy refinement (Alshibani et al., 2023). Follow-on research could therefore focus on the differentiated impact of integrating psychological empowerment and resourceful innovation with more effective sustainable practices, which are essential for the emerging digital entrepreneurial landscape in Saudi SMEs and contribute to national economic diversification and sustainability development goals (Hager et al., 2024).

CONCLUSION

This study investigates the role of entrepreneurial bricolage, ecological innovation, entrepreneurial mindset, and green entrepreneurial orientation in relation to digital entrepreneurial intention among SMEs in Saudi Arabia, and it could provide insight to prospective entrepreneurs by suggesting enhanced capabilities based on prior knowledge gained from relevant lessons (Balubaid, 2025).

Firstly, findings suggest that entrepreneurial bricolage is a key functional capacity that SMEs in resource-constrained and highly dynamic digital contexts will need to develop if they are to survive, let alone prosper. This study contributes to the entrepreneurship literature by highlighting bricolage as a mechanism that enables entrepreneurs to create further realisation orientations for existing resources in response to their financial, technical, and infrastructure constraints (Zafar et al., 2024). This capability not only facilitates digital transformation initiatives but also enhances the sense of entrepreneurial self-efficacy, which refers to the confidence in one's capacity to execute entrepreneurial tasks. Because of this, and because experts recognise that they can develop bricolage skills, it is strongly recommended that entrepreneurship training programs for these types of learning demonstrate the requirement of being able to improvise resources efficiently for meeting urgent needs. Thus, SMEs in Saudi Arabia would be able to improve their adaptability and innovation capacities such that they are better placed to leverage digital business opportunities even under challenging environmental and economic landscapes (Tekala et al., 2024).

Second, the entrepreneurial mindset is useful in the digital economy by fostering proactiveness, resilience, and alertness that result in digital entrepreneurial intention. Such a mindset promoted among SME owners can encourage them to become more inclined towards experimenting with new digital tools and business models, remain active in their explorations into digital ways of doing things even during uncertain times, and be less risk-averse when it comes to manoeuvring through the fickle behaviour of digital markets (Almerri, 2024). To foster entrepreneurial mindsets, this approach must be emphasised in educational curricula, entrepreneurial mentoring, and awareness campaigns that incorporate cognitive and psychological empowerment, such as goal-setting, risk-taking, and continuous learning. Alshibani et al. (2023) predict that these initiatives will foster digital entrepreneurial intentions, which in turn will lead to successful digital ventures.

Third, it is important to note that ecological innovation and green entrepreneurial orientation do not have direct effects on digital entrepreneurial intention, which suggests that relevant practical implications and policy considerations could represent a significant finding. Sustainability remains a strategic imperative for Saudi Arabia as it envisions 2030, but the incorporation of ecological and green values in digital entrepreneurship among SMEs appears to be underdeveloped or unfocused (Alriyami et al., 2025). This gap points to the importance of establishing open and supportive frameworks and incentives, associating sustainability practices explicitly with digital business strategies and market opportunities. Policymakers and supporting organisations should aim to overcome technological access, knowledge gaps, and green financial constraints in order for SMEs to readily adapt to eco-innovation

in their digital businesses. Further promotional activity around the economic and reputational advantages of green digital entrepreneurship could convince SMEs to apply sustainability as an embedded entrepreneurial mindset, possibly instead of a side concern (W. J. Aloulou et al., 2024).

Fourth, the study identifies entrepreneurial self-efficacy as a mediator between resourceful entrepreneurial behaviours and orientations that align with digital entrepreneurial intentions. This confidence allows entrepreneurs to use bricolage and mindset traits to translate concepts into digital initiatives. Consequently, initiatives promoting digital entrepreneurship should take into account the significance of self-efficacy fostered through experiential learning opportunities, observing the success of others, peer networking, and an environment that empowers entrepreneurs to experiment and innovate digitally with assurance (AlMulhim et al., 2025).

More strategically, this study suggests that the elements of psychological empowerment, resourcefulness, sustainability orientation, and digital readiness-orientated approaches will all need to be combined to build a more robust SME-based digital entrepreneurial ecosystem in Saudi Arabia. Responding, in turn, to this call for help by SMEs requires a multidimensional approach to resources, from skills development that encourages bricolage and mindset interventions strengthening to the integration of sustainability, in addition to support for digital technology adoption on relevant programmes targeting SMEs (Al Koliby et al., 2024). Building knowledge-based platforms, providing green and digital technology access, and partnering with technology hubs or incubators may enhance SMEs' digital entrepreneurial willingness and behaviour (Hager et al., 2024).

In future research, academic researchers could, meanwhile, investigate the effects of ecological innovation and green orientation on digital entrepreneurship via indirect or moderated pathways. This fine-grained understanding could help us in realizing more firmly the relationship between sustainability and digitalisation in resource-scarce settings. Tailoring policies and programmes for specific sectors or opportunities, as well as considering contextual conditions like cultural heritage and institutional support in Saudi Arabia, may spark new fields of research (Mashhour, 2022).

To conclude, the practical implications arise from the necessity to augment resourcefulness utilising entrepreneurial bricolage and fostering an appropriate attitude towards bolstering digital entrepreneurial intentions of Saudi SMEs. Though green and ecological motivations only come right in somewhere far down the list of priorities, this research implies that, as well as strategic roadmaps for growth, a step along the way may be to embed sustainability into digital entrepreneurship frameworks (Larabi, 2025). Therefore, recognising these potentials is central to enhancing entrepreneurial self-efficacy. Ensuring the alignment of skill development, policy incentives, and support infrastructures to these insights could greatly assist Saudi Arabia in supporting SMEs to develop competitive, innovative, and sustainable digital entrepreneurial outcomes that align with national developmental aspirations (Sualeh Khattak et al., 2024).

LIMITATION AND FUTURE STUDY

There are several limitations in the study about the effect of entrepreneurial bricolage, ecological innovation, entrepreneurial attitude growth, and green entrepreneurship orientation on digital entrepreneurship intention among Saudi SMEs. First, the research was conducted within a specific segment of SMEs in Saudi Arabia, which limits the generalisability of the findings to other contexts or countries that have different cultural, economic, or institutional backgrounds. Additionally, cross-sectional survey data—as with much of the available data—constrains the ability to adjudicate cause from effect because the relationships are analysed at a single point in time. Third, the study focuses on direct impacts and might miss indirect or moderating roles because it neglects mediation effects of ecological innovation and green entrepreneurial orientation in the model processes, as these variables were not significant in direct impacts. Fourth, self-reported data collected by a questionnaire might suffer from response biases, which could lead to less accurate representations of reported entrepreneurial behaviours and intentions.

Longitudinal research is suggested for further investigation on how digital entrepreneurial intention might change over time and develop in conditions of bricolage, with specific focus possibly on the development of an entrepreneurial mindset within SMEs. Future studies could also examine the mechanisms or processes through which ecological innovation and green entrepreneurial orientation influence digital entrepreneurship, as these represent exciting pathways for exploration. To understand this phenomenon on a deeper level, there is a necessity for more exploration of the variables related to psychology, organisational capacity, and the environment. Nevertheless, future research in other provinces throughout Saudi Arabia, as well as in different Gulf countries and international comparison studies, would help to define the context-dependence and generalisability of these patterns. Ultimately, the narrative findings from qualitative approaches might feed into a more profound understanding of the quantified insights in order to provide more context about how sustainable orientations do or do not relate to digital entrepreneurial activity as experienced by entrepreneurs.

ACKNOWLEDGEMENT

The authors would like to acknowledge the support of Universiti Teknologi MARA (UiTM) for providing facilities and financial support for this research. The authors also want to thank the reviewers and editors for providing useful insights to improve this paper and the respondents who took part in the survey.

FUNDING

This work received no specific grant from any funding agency.

AUTHORS' CONTRIBUTION

Ali Raza carried out the research and wrote and revised the article. Ali Raza and Jati Kasuma Ali conceptualised the central research idea and provided a theoretical framework. Awang Rozaimie and Jati Kasuma Ali designed the research and supervised its progress.

CONFLICT OF INTEREST DECLARATION

The authors agree that this research was conducted without any self-benefits, commercial, or financial conflicts and declare no conflict of interest.

REFERENCES

Abdelwahed, N. A. A. (2023). Nurturing the Entrepreneurial Path: Unraveling the Interplay Between Entrepreneurial Mindset and Intention Through the Lens of Entrepreneurial Culture. *Journal of Law and Sustainable Development*, 11(12), e2269–e2269. https://doi.org/10.55908/sdgs.v11i12.2269

Abdelwahed, N. A. A., Al Doghan, M. A., Saraih, U. N., & Soomro, B. A. (2023). Green entrepreneurship in Saudi Arabia: shaping the landscape of the greener economy. *Journal of Small Business and Enterprise Development*, 30(7), 1352–1376. https://doi.org/10.1108/JSBED-05-2023-0239

Abdelwahed, N. A. A., Bastian, B. L., & Wood, B. P. (2022). Women, entrepreneurship, and sustainability: the case of Saudi Arabia. *Sustainability*, 14(18), 11314. https://doi.org/10.3390/su141811314

Ahmad, A., Albarrak, M. S., Akhtar, S., & Akram, H. W. (2023). Sustainable Development and Saudi Vision 2030: Entrepreneurial Orientation of Students Toward E-Businesses and Proposed Model of "Virtual Business Incubator" for SEU. *Education Research International*, 2023(1), 6106580. https://doi.org/10.1155/2023/6106580

Akila, H. (2021). The Impact of Entrepreneurship on Saudi Arabia's Economy. Unpublished depository. https://doi.org/10.17615/8p4k-4h42

Akram, H., Raza, M., Jan, M. F., Aslam, S., & Nivin-Vargas, L. (2024). Identified leadership practices and teachers' professional development in Karachi, Pakistan: the moderation effect of training. *Education* 3-13, 52(8), 1309–1326. https://doi.org/10.1080/03004279.2022.2146455

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Al Halbusi, H., Popa, S., Alshibani, S. M., & Soto-Acosta, P. (2024). Greening the future: Analyzing green entrepreneurial orientation, green knowledge management and digital transformation for sustainable innovation and circular economy. *European Journal of Innovation Management*. 28 (5), 1916–1942. https://doi.org/10.1108/EJIM-02-2024-0169

Al Jameel, O. S., & Adam, S. (2025). Driving sustainable development: exploring social entrepreneurial behavior in Saudi Arabia universities. *Foresight*. 27(4), 864–885. https://doi.org/10.1108/FS-03-2024-0057

Al Koliby, I. S., Mehat, N. A. B., Al-Swidi, A. K., & Al-Hakimi, M. A. (2024). Is knowledge management a missing link? Linking entrepreneurial competencies and sustainable performance of manufacturing SMEs. *The Bottom Line*, 37(1), 71–97. https://doi.org/10.1108/BL-07-2023-0230

Ali, A. J., Rozaimie, A., Khalid, J., & Hidayah, N. (2024). Conceptualisation of global citizenship, intercultural competence, and domestic internationalisation in enhancing graduates' global employability. *ASEAN Journal of Teaching & Learning in Higher Education*, *16*(2). https://doi.org/10.17576/ajtlhe.1602.2024.12

Al-Ayed, S. (2024). Effect of digital opportunity recognition on students' digital entrepreneurial intentions and behavior. *Problems and Perspectives in Management*, 22(1), 673–686. https://doi.org/10.21511/ppm.22(1).2024.53

Al-Ghazali, B. M., Shah, S. H. A., & Sohail, M. S. (2022). The role of five big personality traits and entrepreneurial mindset on entrepreneurial intentions among university students in Saudi Arabia. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.964875

Al-Mamary, Y. H. (2025). Factors shaping green entrepreneurial intentions towards green innovation: an integrated model. *Future Business Journal*, 11(1), 21. https://doi.org/10.1186/s43093-025-00443-8

Al-Swidi, A. K., Al-Hakimi, M. A., Al Koliby, I. S., Zaid, M. A. K., & Khan, M. F. (2025). Harnessing intellectual capital for green innovation through entrepreneurial orientation. *Global Knowledge, Memory and Communication*. https://doi.org/10.1108/GKMC-04-2024-0233

Albadry, O. M. (2025). Enhancing Digital Innovation Performance: The Role of Strategic Foresight, Entrepreneurial Bricolage, and Strategic Ambidexterity Among Female Entrepreneurs in Saudi Arabia. *Pakistan Journal of Life & Social Sciences*, 23(1). https://doi.org/10.57239/PJLSS-2025-23.1.00373

Alfayyadh, A. (2024). The Influence of Strategic Entrepreneurship on Firm Performance: The Moderating Role of Environmental Dynamism & Digital Business Model Innovation. *Morgan State University*. https://hdl.handle.net/20.500.14154/73313

Alferaih, A. (2022). Starting a new business? Assessing university students' intentions towards digital entrepreneurship in Saudi Arabia. *International Journal of Information Management Data Insights*, 2(2), 100087. https://doi.org/10.1016/j.jjimei.2022.100087

Alghamdi, O. A. (2023). Combination of Decision Logics for Green Innovations in Saudi Arabian based Small and Medium Enterprises Experience. *Information Sciences Letters*: 12(4), 1329-1342. https://digitalcommons.aaru.edu.jo/isl/vol12/iss4/47/

Alkhalaileh, M. Y. (2021). Systematic review: Digital entrepreneurship intention. *Network Intelligence Studies*, 9(17), 25–34. https://ssrn.com/abstract=3802393

Almerri, A. S. (2024). Investigating the Impact of Emirati Entrepreneurial Innovation Strategies by SMEs Within Abu Dhabi's Business Landscape. *Khalifa University of Science*. https://khazna.ku.ac.ae/en/studentTheses/investigating-the-impact-of-emirati-entrepreneurial-innovation-st/

AlMulhim, A. F., Mohammed, S. M., Benlaria, H., & Gheraia, Z. (2025). Refueling intellectual capital toward innovation performance of SMEs in Saudi Arabia: mediating the role of entrepreneurial opportunity recognition. *Business Process Management Journal*, 31(1), 340–364. https://doi.org/10.1108/BPMJ-05-2023-0386

Aloulou, W. J., Alsadi, A. K., Ayadi, F. M., & Alaskar, T. H. (2024). Exploring the Effects of Entrepreneurial and Digital Orientations on the Competitive Advantage of Saudi Firms: Is Strategic Agility the Missing Link? *Administrative Sciences*, 14(11), 306. https://doi.org/10.3390/admsci14110306

Aloulou, W., Ayadi, F., Ramadani, V., & Dana, L.-P. (2024). Dreaming digital or chasing new real pathways? Unveiling the determinants shaping Saudi youth's digital entrepreneurial intention. *International Journal of Entrepreneurial Behavior & Research*, 30(2/3), 709–734. https://doi.org/10.1108/IJEBR-10-2022-0942

Alriyami, H. M., Alamimi, M. H., & Kampouris, I. (2025). Social Entrepreneurial Orientation and Performance: The Mediating Role of Sustainable Practices and Open Innovation. *Journal of the Knowledge Economy*, 1–35. https://doi.org/10.1007/s13132-025-02688-8

Alsaiary, S., Forsgren, E., & Shaw, N. (2024). Digital Transformation among Saudi SMEs: Exploring Contextual Factors. *SaudiCIS 2024 Proceedings*. 73. https://aisel.aisnet.org/saudicis2024/73

Alshagawi, M., & Mabkhot, H. (2024). The impact of strategic entrepreneurship and entrepreneurial marketing, entrepreneurship values on small and medium enterprises' performance: Evidence from Saudi Arabia. *Cogent Business & Management*, 11(1), 2316947. https://doi.org/10.1080/23311975.2024.2316947

Alsharif, H. Z. H., Shu, T., Obrenovic, B., Godinic, D., Alhujailli, A., & Abdullaev, A. M. (2021). Impact of entrepreneurial leadership and bricolage on job security and sustainable economic performance: An empirical study of Croatian companies during COVID-19 pandemic. *Sustainability*, 13(21), 11958. https://doi.org/10.3390/su132111958

Alshebami, A. S. (2023). Green Innovation, Self-Efficacy, Entrepreneurial Orientation and Economic Performance: Interactions among Saudi Small Enterprises. *Sustainability*, 15(3), 1961. https://doi.org/10.3390/su15031961

Alshebami, A. S., Fazal, S. A., Seraj, A. H. A., Al Marri, S. H., & Alsultan, W. S. (2024). Fostering potential entrepreneurs: An empirical study of the drivers of green self-efficacy in Saudi Arabia. *Discover Sustainability*, 5(1), 21. https://doi.org/10.1007/s43621-024-00201-w

Alshebami, A. S., Seraj, A. H. A., Elshaer, I. A., Al Shammre, A. S., Al Marri, S. H., Lutfi, A., Salem, M. A., & Zaher, A. M. N. (2023). Improving social performance through innovative small green businesses: Knowledge sharing and green entrepreneurial intention as antecedents. *Sustainability*, 15(10), 8232. https://doi.org/10.3390/su15108232

Alshibani, S. M., Aloulou, W. J., & Ramadani, V. (2023). New-venture gestation processes amid Covid-19 pandemic: antecedents of Saudi female nascent entrepreneurs. *Business Process Management Journal*. https://doi.org/10.1108/BPMJ-11-2022-0555

Alwakid, W., Aparicio, S., & Urbano, D. (2021). The Influence of Green Entrepreneurship on Sustainable Development in Saudi Arabia: The Role of Formal Institutions. *International Journal of Environmental Research and Public Health*, 18(10), 5433. https://doi.org/10.3390/ijerph18105433

Alzamel, S. (2024). Exploring the role of e-entrepreneurship in fostering future green economy and environmental policies: a study on Saudi women entrepreneurs. *Journal of Environmental Assessment Policy and Management*, 26(01), 2450002. https://ideas.repec.org/a/wsi/jeapmx/v26y2024i01ns1464333224500029.html

Babgi, M. (2023). Digitalization And Internationalization Among Small And Medium-Sized Enterprises: Born-Digital Companies and The Route To Internationalization In Saudi Arabia. 28ème Conférence de l'AIM. https://ideas.repec.org/p/hal/journl/hal-04401322.html

Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, 50(3), 329–366. https://doi.org/10.2189/asqu.2005.50.3.329

Bakry, D., Daim, T., Alzahrani, S., Dabic, M., & Yesilada, B. (2025). Exploring innovation ecosystems to facilitate the adoption of sustainable entrepreneurship: Looking beyond the Western World. J*ournal of Small Business Management*, 63(1), 337–387. https://doi.org/10.1080/00472778.2024.2319782

Balubaid, M. (2025). Systematic literature review: exploring the influence of innovation on competitive advantage in entrepreneurial ventures. مجلة العلوم التجارية والبيئية, 4(2), 165–191. https://doi.org/10.21608/jcese.2024.335782.1090

Cai, W. and Li, G. (2018). The drivers of eco-innovation and its impact on performance: Evidence from China. *Journal of Cleaner Production*, Elsevier Ltd, 176, 110–118. https://doi.org/10.1016/j.jclepro.2017.12.109

Chaaben, N., Elleuch, Z., Hamdi, B., & Kahouli, B. (2024). Green economy performance and sustainable development achievement: empirical evidence from Saudi Arabia. *Environment, Development and Sustainability*, 26(1), 549–564. https://doi.org/10.1007/s10668-022-02722-8

Dote-Pardo, J., Ortiz-Cea, V., Peña-Acuña, V., Severino-González, P., Contreras-Henríquez, J. M., & Ramírez-Molina, R. I. (2025). Innovative entrepreneurship and sustainability: A bibliometric analysis in emerging countries. *Sustainability*, 17(2), 658. https://ideas.repec.org/a/gam/jsusta/v17y2025i2p658-d1568094.html

Elnadi, M., & Gheith, M. H. (2023). The role of individual characteristics in shaping digital entrepreneurial intention among university students: Evidence from Saudi Arabia. *Thinking Skills and Creativity*, 47, 101236. https://doi.org/10.1016/j.tsc.2023.101236

Fozia, M., & Ranabahu, N. (2022). A disadvantage to an advantage? Immigrant entrepreneurs' use of effectuation in business start-up and development in the Kingdom of Saudi Arabia. *In: Dana, LP., Khachlouf, N., Maâlaoui, A., Ratten, V.* (eds) Disadvantaged Minorities in Business. Contributions to Management Science. Springer, Cham. https://doi.org/10.1007/978-3-030-97079-6_7

Hager, M., Alzafari, K., & Rashid, L. (2024). Media narratives on (ecological) sustainability: a topic modeling analysis of entrepreneurship news in the MENA region. *PLOS Sustainability and Transformation*, 3(5), e0000107. https://doi.org/10.1371/journal.pstr.0000107

Iqbal, Q., Piwowar-Sulej, K., & Kallmuenzer, A. (2025). Sustainable development through frugal innovation: the role of leadership, entrepreneurial bricolage and knowledge diversity. *Review of Managerial Science*, 19(2), 573–594. https://ideas.repec.org/a/spr/rvmgts/v19y2025i2d10.1007_s11846-024-00764-y.html

Islam, M. S. (2024). Linking green innovation to environmental quality in Saudi Arabia: an application of the NARDL approach. Environment, *Development and Sustainability*, 27, 19741–19762. https://doi.org/10.1007/s10668-024-04751-x

Kahia, M., Jarraya, B., Kahouli, B., & Omri, A. (2023). Do environmental innovation and green energy matter for environmental sustainability? Evidence from Saudi Arabia (1990–2018). *Energies*, 16(3), 1376. https://doi.org/10.3390/en16031376

Kahia, M., Jarraya, B., Kahouli, B., & Omri, A. (2024). The role of environmental innovation and green energy deployment in environmental protection: Evidence from Saudi Arabia. *Journal of the Knowledge Economy*, 15(1), 337–363. https://doi.org/10.1007/s13132-022-01093-9

Kahouli, B., Hamdi, B., Nafla, A., & Chabaane, N. (2022). Investigating the relationship between ICT, green energy, total factor productivity, and ecological footprint: Empirical evidence from Saudi Arabia. *Energy Strategy Reviews*, 42, 100871. https://doi.org/10.1016/j.esr.2022.100871

Khalid, R., Raza, M., Selem, K. M., Ghaderi, Z., & Raza, H. (2023). Natural disaster is a wakeup call before it becomes social disaster and tourophobia of eco-destinations. *Asia Pacific Journal of Tourism Research*, 28(11), 1226–1240. https://doi.org/https://doi.org/10.1080/10941665.2023.2293789

Khan, M. A. (2022). Barriers constraining the growth of and potential solutions for emerging entrepreneurial SMEs. *Asia Pacific Journal of Innovation and Entrepreneurship*, 16(1), 38–50. https://doi.org/10.1108/APJIE-01-2022-0002

Larabi, C. (2025). The role of resource orientation, technology innovation, and strategic flexibility in driving firm performance. *Management & Sustainability: An Arab Review*. https://doi.org/10.1108/MSAR-08-2024-0083

Li, C.Q., Harichandran, R.S., Carnasciali, M.-I., Erdil, N.O. and Nocito-Gobel, J. (2016). Development of an Instrument to Measure the Entrepreneurial Mindset of Engineering Students. *American Society for Engineering Education*, New Orleans, LA. https://digitalcommons.newhaven.edu/civilengineering-facpubs/35/

Mabkhot, H., Semlali, Y., Gelaidan, H. M., Abdelwahed, N. A. A., & Shaari, H. (2024). Green entrepreneurial intentions in Saudi youth: cultural insights and implications. *Discover Sustainability*, 5(1), 480. https://doi.org/10.1007/s43621-024-00750-0

Mashhour, Q. M. Q. (2022). The role of frugal innovation and social entrepreneurship in supporting socioeconomic life in emerging markets. *Journal for Research on Business and Social Science*, 5(5). 1-22. https://www.jrbssonline.com/wp-content/uploads/2022/06/Volume5Issue5Paper1.pdf

Muangmee, C., Dacko-Pikiewicz, Z., Meekaewkunchorn, N., Kassakorn, N. and Khalid, B. (2021). Green Entrepreneurial Orientation and Green Innovation in Small and Medium-Sized Enterprises (SMEs). *Social Sciences*, 10(4), 136., https://doi.org/10.3390/socsci10040136

Nguyen, P.N.-D. and Nguyen, H.H. (2024). Examining the Role of Family in Shaping Digital Entrepreneurial Intentions in Emerging Markets. *Sage Open*, 14(1), https://ideas.repec.org/a/sae/sagope/v14y2024i1p21582440241239493.html

Qasim, S., Raza, M., Ilyas, M. A., Ansari, H. W. A., & Khalid, R. (2025). Do not take every workplace problem to home: a role of social support to manage employees' work stressors and conflicts with family. *Global Knowledge, Memory and Communication*. https://doi.org/10.1108/GKMC-09-2024-0606

Ragmoun, W. (2024). The Analysis of Trigger Factors of the Environmental Entrepreneurship Process in Saudi Arabia: An Innovative Approach. *Economies*, 12(9), 254. https://doi.org/10.3390/economies12090254

Raza, M., Khalid, R., Loureirco, S. M. C., & Han, H. (2024). Luxury brand at the cusp of lipstick effects: Turning brand selfies into luxury brand curruncy to thrive via richcession. *Journal of Retailing and Consumer Services*, 79, 103850. https://doi.org/https://doi.org/10.1016/j.jretconser.2024.103850

Raza, M., Khalique, M., Khalid, R., Kasuma, J., Ali, W., & Selem, K. M. (2025). Achieving SMEs' excellence: scale development of Islamic entrepreneurship from business and spiritual perspectives. *Journal of Islamic Accounting and Business Research*, 16(1), 86–106. https://doi.org/10.1108/JIABR-02-2023-0060

Samargandi, N., & Sohag, K. (2022). The interaction of finance and innovation for low carbon economy: Evidence from Saudi Arabia. *Energy Strategy Reviews*, 41, 100847. https://doi.org/10.1016/j.esr.2022.100847

Satar, M. S., Alharthi, S., Omeish, F., Alshibani, S. M., & Saqib, N. (2024). Digital learning orientation and entrepreneurial competencies in graduates: Is blended learning sustainable? *Sustainability*, 16(17), 7794. https://doi.org/10.3390/su16177794

Senyard, J., Baker, T., Steffens, P. and Davidsson, P. (2014). Bricolage as a Path to Innovativeness for Resource-Constrained New Firms. *Journal of Product Innovation Management*, 31(2), 211–230. https://doi.org/10.1111/jpim.12091

Sualeh Khattak, M., Wu, Q., Ahmad, M., & Ullah, R. (2024). The role of managerial competencies in managing resources for sustainable development strategy in SMEs. *Social Responsibility Journal*, 20(7), 1317–1344. https://doi.org/10.1108/SRJ-11-2023-0634

Sulaiman, M. A. B. A., Asad, M., Awain, A. M. S. B., Asif, M. U., & Shanfari, K. S. Al. (2024). Entrepreneurial marketing and performance: contingent role of market turbulence. *Discover Sustainability*, 5(1), 492. https://doi.org/10.1007/s43621-024-00710-8

Tekala, K., Baradarani, S., Alzubi, A., & Berberoğlu, A. (2024). Green entrepreneurship for business sustainability: do environmental dynamism and green structural capital matter? *Sustainability*, 16(13), 5291. https://doi.org/10.3390/su16135291

Wang, Y.S., Tseng, T.H., Wang, Y.M. and Chu, C.W. (2020). Development and validation of an internet entrepreneurial self-efficacy scale", *Internet Research*, 30(2), 653–675, https://doi.org/10.1108/INTR-07-2018-0294

Wasiq, M., Kamal, M., & Ali, N. (2023). Factors influencing green innovation adoption and its impact on the sustainability performance of small-and medium-sized enterprises in Saudi Arabia. *Sustainability*, 15(3), 2447. https://doi.org/10.3390/su15032447

Yang, J., & Bentein, K. (2023). Entrepreneurial leadership and employee creativity: a multilevel mediation model of entrepreneurial self-efficacy. *Management Decision*, 61(9), 2645–2669. https://doi.org/10.1108/MD-04-2022-0449

Yaseen, A., Omar, R. B. C., Osman, L. H., & Hamid, R. B. A. (2025). Evaluating the Framework of the Notion Entrepreneurial Intention and Resilience: A Prisma Approach. *Administrative Sciences*, 15(6), 224. https://doi.org/10.3390/admsci15060224

Zafar, S., Sohail, A., CA, B. S., Saeed, N., & Naeem, M. F. (2024). Driving Entrepreneurial Sustainability: Unveiling The Influence of Performance, Social Dynamics, and Privacy Factors on Behavioral Intentions. *Kurd. Stud*., 12, 1068–1077. https://doi.org/10.53555/ks.v12i4.3108