SSAR Journal of Economic and Business Management (SSARJEBM)

Journal homepage: https://ssarpublishers.com/ssarjebm-2/
Abbreviated Key Title: SSAR J Econ Bus Manage
ISSN: 3107-4146 (Online)
Volume 2, Issue 1, (Jan-Feb) 2026, Page 33-49 (Total PP.17)
Frequency: Bimonthly
E-mail: ssarpublishers@gmail.com

OPEN ACCESS

ARTICLE HISTORY
Received: 16-01-2026 / Accepted: 04-02-2026 / Published: 06-02-2026

Nexus between Computing Innovation and Technology Entrepreneurship in Emerging Markets

By
Corresponding authors: Abdullateef Ajibola Adepoju[1], Aliyu Mohammed[2], Maryam Folakemi Adepoju[3]
[1]Randatech Systems Ltd, Gidan Nasir Ahmed, No. 3 Zaria Road, Opposite Ja'oji Quarters, Kano, Nigeria.
[2]Department of Management, School of Arts, Management and Social Sciences, Skyline University Nigeria, Kano.
[3]11 Umaru Muhammadu Street, 65 NNDC Quarters, Hotoro GRA, Kano, Kano State, Nigeria.

ABSTRACT: This study explored the overlap between computing innovation and technology entrepreneurship in the emerging markets and consequently how the multidimensional technological advancement affects the formation, performance, and viability of entrepreneurship enterprises. The conceptual paper method is used in the study to assess the current literature on the international, African, West African, and Nigerian environment and summarize it to have an inclusive view of how digital products, AI-based innovation, platform-based systems, and ICT infrastructure relate and affect the results of technology entrepreneurship. It relies on the Diffusion of Innovation (DOI) Theory, Resource-Based View (RBV), and Technological Innovation Systems (TIS) Theory to conduct its research, which was integrated into a conceptual model of computing innovation on the performance of an entrepreneur. The findings that are necessary suggest that computing innovation has the potential to enhance startup, identification of opportunities, and competitive advantage, and the limitations, such as the absence of digital literacy and infrastructural issues, restrict the potential of technology-based entrepreneurship. The paper presents practical suggestions to entrepreneurs, policymakers, investors, and researchers that include the necessity of more comprehensive digital infrastructure, tactical use of resources, and enabling innovation ecosystems, which will lead to the development of entrepreneurship.

KEYWORDS: Computing Innovation, Technology Entrepreneurship, Emerging Markets, Digital Infrastructure, AI-Driven Innovation, ICT, Startup Performance.

INTRODUCTION

1.1 Background of the Study

The invention of computing has become one of the most powerful forces of economic change and entrepreneurship in the global knowledge economy. The digital technologies that have transformed the entrepreneurial opportunity identification, innovation, and competition processes are artificial intelligence, cloud computing, automation, and digital platforms (Dana et al., 2022; Singh et al., 2023). A combination of computing innovativeness and entrepreneurship in most advanced and emerging settings has resulted in new models of ventures, faster growth of businesses, and fewer entry barriers (Thukral et al., 2008). Across the world, researchers believe that technology-based entrepreneurship has become one of the major pillars of competitiveness, and digital innovation is one of the primary determinants of business performance, organizational agility and sustainable competitive advantage (Hussain et al., 2025; Van Hoang et al., 2025). Consequently, computing innovation is not considered as an aid tool but the key to entrepreneurial success in the

fourth industrial revolution. Digital transformation in Africa has significantly changed the entrepreneurial ecosystem with most studies showing that computer innovation is driving new business model and new online startups. The African entrepreneurs are shifting to solutions that are based on the clouds, data analysis, mobile applications, and frugal innovations to overcome the challenge of infrastructures and lack of resources (Shibin et al., 2018). Examples of the countries that have demonstrated how computing innovation can be leveraged to generate employment, enhance productivity and expand markets reach are Kenya, Rwanda, South Africa, and Ghana because of the difficult economic situations (Dana et al., 2022). The emerging digital potential of the continent, though unequally distributed is becoming a major factor in the current business endeavors based on technology and augmenting the innovation potential of small and medium enterprises.

The digital entrepreneurial environment in Western Africa is still developing with governments and non-governmental players in the industry focusing more on computing-based solutions to structural economic issues. The digital startups, platforms, and innovation-driven SMEs in countries like Nigeria, Ghana, and Senegal have grown fast, along with digital infrastructure development and the rising global technology ecosystems (Tripathi and Brahma, 2018). An improved use of digital knowledge networks, platform-based innovations, and technology incubation programs is becoming a popular mode of development and scale of new ventures by West African entrepreneurs (Udekwe & Iwu, 2024). Computing innovation is also catalyzing new modes of opportunity identification, online venture development and capability formation of technology, which are major elements of technology entrepreneurship that creates competitive advantage in new markets. In Nigeria, computer innovation has already turned out to be a revolution in the field of entrepreneurship, especially with the advent of digital services, financial technologies, online stores, and IT-oriented SMEs. Nigeria is one of the largest technology markets in the African continent and shows how the performance of entrepreneurship can be augmented by the use of digital capabilities even in the area where infrastructures and institutions are limiting. As recent evidence indicates, digital technologies are transforming the production process, skills formation, and innovation in all fields (Mohammed, 2024; Mohammed, 2023a; Mohammed, 2023b). The growing young population of the country and the active entrepreneurial environment also inspires the need to innovate in the sphere of computing, which allows the entrepreneurs to use new technologies, enhance the efficiency of their operations, and enter new local and international markets. As Kano, Lagos, and Abuja emerge as emerging tech fermenters, Nigeria is an important context in terms of studying the role of computing innovation in technology entrepreneurship in emerging markets (Pavaloiu et al., 2021).

1.2 Problem Statement

In spite of the high rate of computing innovation spread across the global sphere and its disruptive innovation in the growth of entrepreneurship, a number of the emerging markets still face high levels of structural, technological, and institutional constraints that inhibit the technology-driven entrepreneurship. Despite the fact that digital technologies have provided new opportunities of e-business and innovation in the global environment, even in the emerging markets, entrepreneurs continue to encounter barriers that are associated with poor digital infrastructure, underdeveloped innovation ecosystem, and insufficient access to sophisticated computational services (Gregorio et al., 2005; Jawad et al., 2021). With technological readiness and institutional support becoming more critical in generating breakthrough innovations, the above gaps prevent the entrepreneurs to maximize the use of computing innovation to develop, scale and maintain competitive ventures (O'Connor and Rice, 2013; Eliakis et al., 2020). This is further strengthening a gap between technological possibility and entrepreneurial capacity in the developing economies. Most emerging economies do not use technology-based social innovation to its fullest extent, and the efforts of digital transformation are not always planned based on the needs of entrepreneurs. The obstacles on the way to implementation of digital technologies in business models are still driven by social, economic, and infrastructural factors, which

restrict the opportunities to achieve innovation-driven growth (Maijamaa et al., 2023). Businessmen find it difficult to use more sophisticated computing innovations, including AI, big data analytics, and more sophisticated digital platforms, which are becoming necessary to recognize opportunities, make decisions, and create value (Amoako et al., 2021; Abrokwah-Larbi, 2024). This has led to the fact that the penetration of digital entrepreneurship is still not even and the ability of firms to leverage on computing-induced opportunities is highly limited.

The lack of technological infrastructure, lack of analytics capabilities and access to digital markets are additional problems confronting entrepreneurial ecosystems in the context of the West Africa. As the digital transformation grows, most businesses are operating in settings where innovation is poorly supported by institutions and where they have little exposure to robust technological systems (Goldman et al., 2021). Such constraints do not allow the startups and SMEs to adopt computing-based methods like digital market intelligence, AI-based decision-making, and cross-border expansion of digital markets, which is central to their competition in the current technology-intensive business environment (Liu et al., 2025). Consequently, technology entrepreneurs in the region are confronted with a lack of operational alignment of the increasing supply of digital tools and their technical capacity to make the most out of them. Systemic issues, such as bad access to the infrastructure of the digital technology, the lack of finances to fund innovation, and the sluggishness with which the latest computing solution are adopted, remain a setback in technology entrepreneurship in Nigeria. Disruptive technologies promise to be very effective in driving an innovative process, but they are limited by a lack of digital preparation and socio-economic accessibility (Odey & Ebri, 2022). There are other risks that Nigerian business people undertake when operating in the digital market, e-commerce, and application of computing innovations in business practices (Mohammed, 2023a; Mohammed, 2023b). Risk management, the digital capacity building, and alignment of innovations are still barriers even in the technologically developing areas of smart manufacturing and sustainable agricultural projects (Kumar et al., 2024; Lawal et al., 2023; Mohammed, 2023c). The ensuing discrepancy between the technological promise and the entrepreneurial efficiency suggests the necessity of a conceptual exploration of the role of computing innovation in technology entrepreneurship in Nigeria and beyond in the emerging markets.

1.3 Significance of the Study

The relevance of the study is that it would fill the gap in research on computing innovation and technology entrepreneurship in the emerging markets hence offering essential information to the entrepreneur, policymakers, and scholars. The world is now learning to embrace the importance of technology-based entrepreneurship in value creation particularly in the fields of health care, digital services as well as smart manufacturing (Kulkov et al., 2023; Marvel and Lumpkin, 2007). This research can inform strategic management of the use of technology to improve the performance of innovation, as well as the ability to grow with innovation in resource-limiting contexts (Chen and Kim, 2023; Mohammed, 2023a). To Africa, the study is especially pertinent considering how the region is pursuing knowledge-based economies as well as innovation-led development. According to previous studies, entrepreneurial human capital, intellectual property systems, and strong institutional systems are important to encourage technology entrepreneurship (Phale et al., 2021; Chen and Puttitanun, 2005; Manolova et al., 2008). This research enlightens the strategies that may be implemented to enhance existing innovation capacity, competitive advantage and sustainable development by investigating the relationship between computing innovation and entrepreneurial activity in the African markets.

The paper meets a need in West Africa where the SMEs and startups must address the digital transformation process effectively. According to the recent studies, digitalization can significantly improve the performance of organizations, organizational competitiveness, when practiced along with the strategic management practices (Diaz-Arancibia et al., 2024; Mohammed and Sundararajan, 2023a; Mohammed and Sundararajan, 2023b). The manner through which

the use of technology entrepreneurship is possible to control the limitation of resources, high risk, and enhance the outcome of the innovation is vital to the economic development of the area and the diversification of industries. The policy implications of the research in Nigeria are directly applicable to policy makers, practitioners in entrepreneurship and any academic institution that may wish to come up with technology-based ventures. It was also reported that better organizational performance, financial control, and business remodeling were linked to the use of computing technologies, such as the management information system and digital business strategies (Mohammed, 2023a; Mohammed and Sundararajan, 2023c; Putra et al., 2024). The study provides evidence-based suggestions on what can be done to enhance the performance of the entrepreneurs and to achieve sustainable development through determining key enablers and barriers to technology entrepreneurship and provide evidence-based suggestions on how the same can be applied to work in the Nigerian context by focusing on the interventions, capacity building and policy formulation.

1.4 Research Objectives

The study seeks to achieve the following objectives:

1. To examine the influence of computing innovation on the development and performance of technology entrepreneurship in emerging markets.
2. To investigate the role of digital infrastructure and technological capabilities in enhancing entrepreneurial outcomes.
3. To assess the relationship between technology-driven strategies and the competitive advantage of startups and SMEs.
4. To identify the challenges and enablers affecting technology entrepreneurship adoption in emerging market contexts.

1.5 Research Questions

Based on the objectives, the study seeks to answer the following questions:

1. How does computing innovation impact the growth and performance of technology entrepreneurship in emerging markets?
2. What is the role of digital infrastructure and technological capabilities in shaping entrepreneurial success?
3. How do technology-driven strategies influence the competitive advantage of startups and SMEs?
4. What are the key challenges and enabling factors affecting the adoption of technology entrepreneurship in emerging markets?

2.0 Literature Review

This part will constitute the overview of the literature on computing innovation and technology entrepreneurship in the emerging markets. It combines both conceptual and theoretical and empirical findings of global, regional, and national levels, emphasizing the multidimensional aspect of the independent variable (computing innovation) and the unidimensional dependent variable (technology entrepreneurship outcomes).

2.1 Conceptual Review

2.1.1 Concept of Computing Innovation

The computing innovation is defined as the introduction and introduction of new computing technologies, tools and systems that improve the organizational and entrepreneurial process. It also includes a broad scope of innovations, such as software, digital platforms, AI, and ICT infrastructure enhancements. Computing innovation has been identified as an important factor in entrepreneurship in the world, especially in technology-heavy industries (Thukral et al., 2008; Dana et al., 2022). With the help of such innovations, it becomes possible to develop the product, work more effectively, enter a new market, and create new business models, which enable entrepreneurs to use technology to gain a competitive edge (Pavaloiu et al., 2021; Singh et al., 2023). Computing innovation is advancing slowly in Africa thus altering the conventional manner of doing business, with companies embracing digital solutions that are more effective and reach more customers (Udekwe & Iwu, 2024). Having shifted towards cloud computing, mobile applications, and AI-based solutions, the latter has become more relevant to startups and SMEs that have to operate in the conditions of the limited resources (Tripathi and Brahma, 2018). Nigeria, West Africa, and other countries are witnessing a spike in digital entrepreneurship due to transformative computing practices, even though the issues concerning infrastructure and regulatory frameworks continue against them (Mohammed, 2024; Hussain et al., 2025). These innovations do

not only enhance operational capacities but also knowledge sharing, networking and collaborative projects among technology entrepreneurs.

2.1.2 Concept of Technology Entrepreneurship

Technology entrepreneurship is the act of taking up entrepreneurship opportunities by designing and commercializing technological innovations. It combines the knowledge, creativity and strategic management in order to come up with new products, services and processes that fulfil the emerging market needs (Bruton et al., 2008; Cao and Shi, 2021). Technology entrepreneurship has played a central role in the world in terms of developing high growth start-ups and innovation-based businesses, economic growth, employment opportunities, and competitiveness in the knowledge-based based industry (Doganova and Eyquem-Renault, 2009; Zhou et al., 2005). Technology entrepreneurship in the African setting is becoming an important channel to economic diversification and young people employment. With the help of mobile technologies, fintech solutions, and online platforms, entrepreneurs can break the traditional dimension of the market, develop repeatable business models, and enter the international market (Ratten, 2014; Nguyen and Nguyen, 2024). Technology entrepreneurship is gaining momentum in Nigeria by promoting software development, e-commerce, and digital finance, which allows SMEs and startups to use innovative strategies to penetrate the market, achieve efficiency in operations and value creation (Mohammed et al., 2022; Shanmugam Sundararajan et al., 2024). Technology entrepreneurship is hence a means of technological diffusion as well as means of socio-economic change in the emerging markets.

2.1.3 Dimensions of Independent Variable (IV): Computing Innovation

Computing innovation is a multidimensional construct, and each dimension indicates various dimensions of technological development and adoption that influence entrepreneur performance. All the dimensions play different roles in the development, acquisition, and maintenance of technology-based businesses.

2.1.3.1 Digital Product Innovation

Digital product innovation entails the creation of new software, applications, and online tools that can address the needs in the market. It allows entrepreneurs to develop differentiated services and products, improved user experience, and develop new revenue streams (Zhang et al., 2023; Tessler et al., 2003). Digital product innovation aids SMEs in emerging markets to address conventional barriers, including low physical infrastructure, by providing scalable and cost-effective options (Shafi et al., 2019).

2.1.3.2 Process & Operational Innovation

Process and operational innovation aims at enhancing internal processes, production processes, and service delivery systems by adopting the use of technology. Automation, workflow management, and optimization of resources contribute to the increased effectiveness, decreased costs and responsiveness to market shifts (Jiang et al., 2021; Zhou et al., 2005). In the new markets, these innovations are essential in helping companies to deal with the scarcity of resources and competition.

2.1.3.3 Platform-Based Innovation

Platform-based innovation is a kind of innovation that is applied to the development of digital ecosystems, online auctions, or collaborative platforms and links users, producers and service providers. Such innovations facilitate network effects, sharing of knowledge, and scalability at a very rapid pace which is required by technology entrepreneurs that work in dynamic market conditions (Doganova and Eyquem-Renault, 2009; Cao and Shi, 2021).

2.1.3.4 AI-Driven Innovation

The concept of AI-driven innovation is based on the idea that artificial intelligence technologies, including machine learning, predictive analytics, and automation, can be used to improve decision-making, customer engagement, and operational efficiency (Singh et al., 2023; Hussain et al., 2025). AI-based solutions in emerging markets give business people the capability of predicting demand, personalization of products, and optimization of resources allocation, even in the face of infrastructural and financial constraints.

2.1.3.5 ICT Infrastructure Innovation

ICT infrastructure innovation refers to the creation and implementation of trusted hardware, networking and digital connectivity models to support technology adoption (Thukral et al., 2008; Pavaloiu et al., 2021). This aspect is especially

applicable in the emerging markets where digital entrepreneurship is mostly limited by poor internet connectivity, lack of data centers and insufficient computing resources. The empowerment of ICT infrastructure improves the innovation capacity and creates an inclusive technology-based entrepreneurship.

2.1.4 Dependent Variable (DV): Technology Entrepreneurship Outcomes

The unidimensional dependent variable in this research is the technology entrepreneurship outcomes that describe the general performance, development, and sustainability of technology-oriented businesses. They include expansion in market, increase in revenue, efficiency in operations and adoption of innovation (Bruton et al., 2008; Mohammed et al., 2024). These are directly related to effective utilization of computing innovations, which make entrepreneurs gain competitive advantage, sustainability in the changing markets, and long-term business growth (Nguyen and Nguyen, 2024; Shanmugam Sundararajan et al., 2024). The research looks at the multidimensional nature of computing innovation as a whole in influencing the outcomes of technology entrepreneurship in the context of emerging markets, which offers insight related to the strategic implementation and the policy support of digital entrepreneurship.

2.2 Model of the Study

The theoretical model of this research is shown by the cause-and-effect relationship between multidimensional computing innovation as an independent variable and technology entrepreneurship outcomes as a dependent variable. It is viewed that computing innovation is multidimensional as it involves various technological capability such as digital product innovation, process and operational innovation, platform-based innovation, AI-driven innovation and ICT infrastructure innovation. All these dimensions have an impact on the success of emerging market entrepreneurial ventures that are driven by technology. The model presents the outcome of technology entrepreneurship- business development, market growth, operational efficiency and adoption of innovations as the ultimate product of computing innovations. According to the model, the various dimensions of computing innovation either singly or interactively contribute to the performance in entrepreneurship, competitive edge and sustainable business growth of the dynamic and resource limited markets (Thukral et al., 2008; Singh et al., 2023; Mohammed et al., 2024).

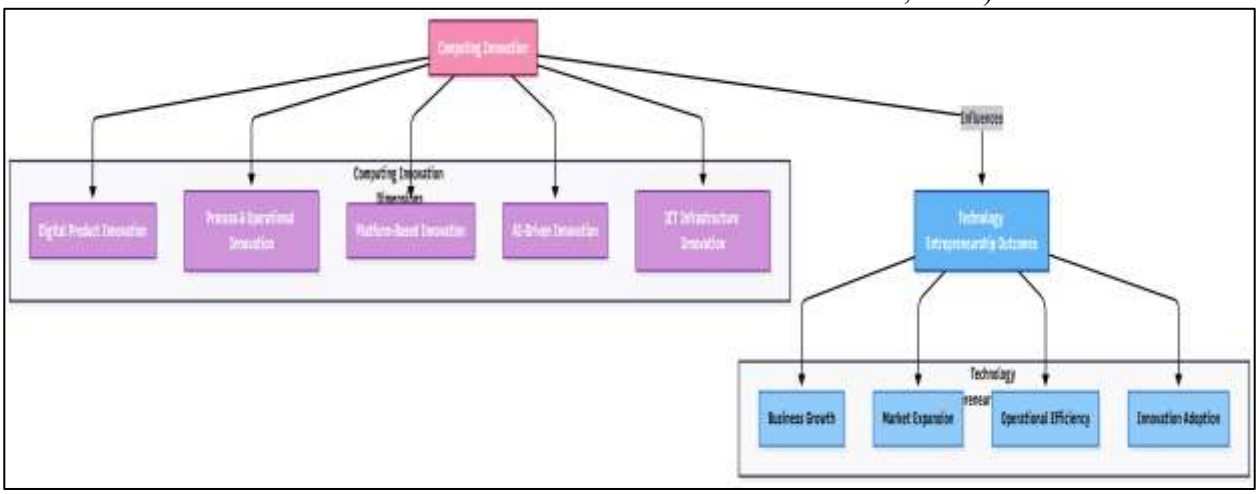

Figure 10.1: *Model of the Study Linking Computing Innovation to Technology Entrepreneurship Outcomes*

Source: Researcher's Design (2025)

The digital infrastructure, policy environment, and market readiness external contextual factors are also listed in the framework as the concept of the external contextual moderator of the computing innovation and technology entrepreneurship results relationship. This is to ensure that the technological abilities are not only embodied by the model but also by taking into account the environmental limitations and opportunities that are typical of emerging markets (Hussain et al., 2025; Pavaloiu et al., 2021). The research does provide a systematic kind of explanation to the role of different kinds of computing innovation in the performance of technology entrepreneurship and it

also provides a platform through which empirical testing and policy proposals can be initiated towards launching technology-based entrepreneurship.

2.3 Theoretical Framework

The study theoretical framework is a combination of a number of theories which point to how computing innovation defines the fate of technology entrepreneurship in emerging markets. It is a paradigm that plays a critical role in the explanation of diffusion and strategic implementation of the technological innovations and the processes within the system, which contribute to the development of entrepreneurship.

2.3.1 Diffusion of Innovation (DOI) Theory

Rogers developed what is called the DOI theory which describes how new technologies and innovations can be communicated, adopted and diffuse into the social systems, over some time, taking place. In the case of emerging markets, computing novelties, or digital products, or AI-driven platforms, go viral among the entrepreneurs through the process of sharing information, social networking, and interactions in the market. DOI is a prism that offers the ability to analyse the impact of early adopters and innovators on larger entrepreneurial groups so that technology-driven businesses can accelerate and more effectively embrace new tools and processes (Xie et al., 2021; Bilal et al., 2025). The process of diffusion is significant in determining the adoption barriers (examples include infrastructural shortfalls, policy constraints, and skills gaps) that could play a crucial role in determining the success of computing innovation in improving entrepreneurial performances.

2.3.2 Resource-Based View (RBV)

The RBV stresses that companies attain sustainable competitive advantage by strategically acquiring, developing, and putting into practice unique resources and capabilities. The innovation of computing has become an organizational strategic asset, and, through the use of digital products, artificial intelligence systems, and ICT infrastructure, technology entrepreneurs could strive to distinctly stand out in the most competitive emerging markets. The platform-based business model and process optimization are among the innovations that will become still imitable resources contributing to the entrepreneur performance (the market growth, process efficiency, and profitability) (Mahadea and Kaseeram, 2022; Sundararajan and Mohammed, 2022). By making computing innovation a valuable, rare, and non-substitutable resource, RBV suggests why the results of technology entrepreneurship are not consistent across firms and ecosystems.

2.3.3 Technological Innovation Systems (TIS) Theory

The TIS theory puts attention on the institutional and systemic processes that support the development, adoption, and diffusion of technology. It highlights the significance of networks, facilitating institutions, policies, and market structures which together make innovation-led ventures successful. TIS is used in emerging markets to describe the way computing innovations are facilitated, or impeded, by ecosystems, such as the digital infrastructure, entrepreneurial education, availability of venture capital and regulatory resources, and regulations. The theory also gives prominence to the fact that the effective innovation systems enable the organization of the continuous feedback, learning, and adjustment, without which the expansion of technology entrepreneurship in resource-constrained environments is impossible (Marshall et al., 2017; Rehman et al., 2025).

2.3.4 Linkages Between Theories, IV, and DV

The innovations of computation sneak into the entrepreneurship activities enabling the entrepreneur to accept new technologies in a brief period of time and innovate products and optimization of operations (DOI). Simultaneously, as a source of strategic resources, computing innovation fosters the skills of companies to achieve sustainable competitive advantage (RBV). TIS augments such mechanisms by ensuring that there are supportive structures, institutions and policies that exist to be able to encourage the ruthless adoption of innovation and entrepreneurial development. Combined, these theories can explain the comprehensive framework under the influence of the multidimensional computing innovations on the unidimensional outcomes of technology entrepreneurship, including business growth, market expansion, operational efficiency, and

adoption of innovations (Sundararajan et al., 2023; Mohammed et al., 2024).

2.4 Theoretical Model of the Study

The theoretical model is a combination of DOI, RBV and TIS used to demonstrate the effect of computing innovation on technology entrepreneurship in emerging markets. DOI comprehends the process of adoption of innovation, RBV locates computing innovation as a strategic organizational asset, and TIS makes sure that systemic, institutional, and infrastructural preconditions are favorable to the success of the entrepreneur. The model offers fragile and practical implications to policymakers, investors, and entrepreneurs by integrating the two views explaining the mechanisms by which multidimensional computing innovation produces better technology entrepreneurship results.

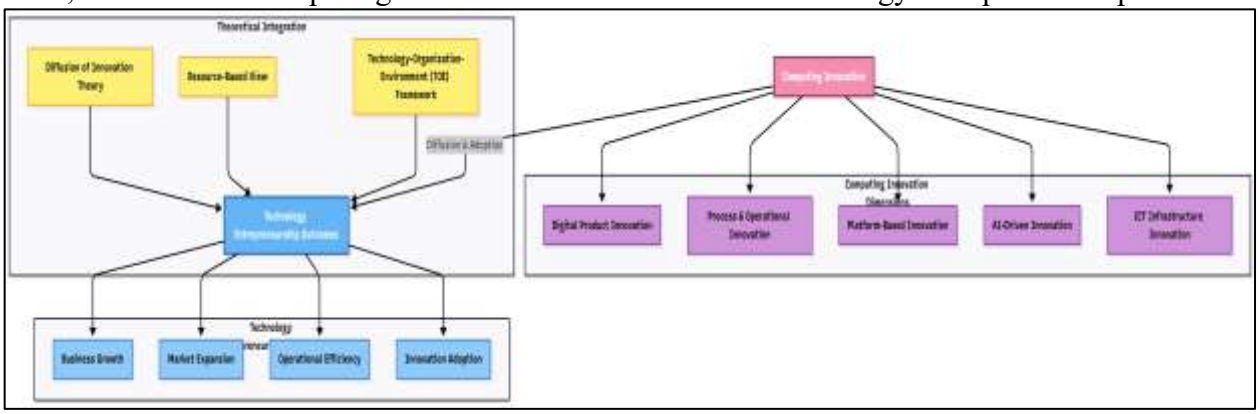

Figure 2.2: Model of the Study Linking Computing Innovation to Technology Entrepreneurship Outcomes with Theoretical Integration

Source: Researcher's Design (2025)

As shown by the model, the computing innovations affect the outcome of entrepreneurship both directly and indirectly via diffusion and adoption processes. Digital product and AI-supported innovation strengthen innovations in new ventures, whereas the platform-based and operational innovation support the scalability and efficiency. These processes are based on the technology infrastructure and it is the ICT infrastructure that supports them. The fact that DOI, RBV, and TOE theories are included implies that the adoption can be affected by the technological characteristics as well as by organizational resources, capabilities, and environmental context. In general, the model suggests that technology-based businesses that build competitive advantages based on multidimensional computing innovations have higher chances of attaining sustainable growth and successful uptake of innovations in volatile markets.

2.5 Empirical Review

Empirical literature illustrates that computing innovation plays a major role in creating and founding of start ups in new market by reducing entry barriers and ability to create prototypes of products and services quickly. According to Thukral et al. (2008), the new technologies enable the entrepreneur to overcome the traditional infrastructure barriers so that he/she can create a venture at a faster rate. This is supported by Dana et al. (2022) who demonstrate that digital technologies, such as cloud computing and software platforms, offer startups market analysis tools, customer engagement tools, and operational automation tools. Pavaloiu et al. (2021) also note that computing innovation improves the capacity of new companies to determine the feasibility of new business models, resource allocation, and investment in new ventures at an early stage. Together, these findings suggest that computing innovation is a source of startup formation due to its ability to offer both the technological resources and entrepreneurial expertise. Computing innovation is also important in determining opportunity recognition which is the main part of entrepreneurial success. Udekwe and Iwu (2024) add that digital platforms and information-driven systems allow entrepreneurs to identify market gaps and consumer needs better, and Singh et al. (2023) mention the ability of the topic modeling and analytics tools to identify new trends in the market. As Tripathi and Brahma (2018) demonstrate, in India, innovation ecosystems that rely on technology furnish frames of perceiving

opportunities in computerized manufacturing, e-commerce, and fintech. All these studies are alluding to the fact that, the access and strategic exploitation of computing innovations enhance the capacity of an entrepreneur to smell, grab and exploit business opportunities in an emerging economy.

New ventures are becoming more and more based on artificial intelligence, cloud computing, and other digital technologies. Maijamaa et al. (2023) demonstrate that AI-based analytics and cloud-based technologies are a frequent source of technology-driven social innovations, since they provide actionable insights into business model design. Gregorio et al. (2005) point out that digital infrastructures are central to the e-business operations in emerging markets in order to facilitate the smoothing of the businesses, deepening customer experience, and scaling services. Amoako et al. (2021) show AI implementation in the decision-making process enhances the product development, market penetration, and efficiency of operations. According to Abrokwah-Larbi (2024), the technologies assist the entrepreneurs in maximizing the resources and minimizing uncertainties, thereby increasing the chances that the venture will be successful upon its creation. In sum, the above results highlight the revolutionary role of AI, cloud, and digital solutions in creating innovative startups. Nigeria, India and some parts of Africa are emerging markets where different empirical findings exist on computing innovation and technology entrepreneurship. Jawad et al. (2021) and Odey and Ebri (2022) demonstrate that disruptive technologies enhance the entrepreneurial innovation and competitiveness in the new economies. In developing countries, Kulkov et al. (2023) emphasize the importance of healthcare technology entrepreneurship, whereas in developed countries, radical innovation is driven by human capital and digital innovations (Marvel and Lumpkin, 2007). Research found as well that computing innovations are connected to entrepreneurial performance through the mediation of entrepreneurial ecosystems, institutional support, and R&D investment (Erdogan and Yamaltdinova, 2019; Diaz-Arancibia et al., 2024). The efficiency and market penetration of SMEs that implement digital technologies and agile innovation were found to be better in Nigeria (Mohammed et al., 2022), which supports the applicability of computing innovation to the real-world environment of entrepreneurship. Although there is strong evidence, there still exist a number of gaps in the literature. First, even though computing innovation has been extensively researched at the global and regional levels, little research has been conducted on the multidimensional impact of computing innovations, such as AI, digital platforms, and ICT infrastructure, on emerging market entrepreneurship. Second, current contextual studies of African and Nigeria markets are few and there is a presence of a contextual gap in localised knowledge. Third, in empirical studies, there is a lack of integration of theoretical perspectives including DOI, RBV, and TIS, which leads to a gap in the theoretical perspective. Finally, the majority of studies will be based on surveys or second-hand data, and the gaps in methods reveal the absence of longitudinal effects of technology adoption on the results of an entrepreneurship. These gaps necessitate that the computing innovation-entrepreneurship nexus in the emerging markets be addressed to fully understand the concept.

2.6 Research Gap

The current literature concentrates more on the single aspect of computing innovation without many carrying out the multidimensional aspect of the independent variable. Although previous studies emphasize the use of AI, clouds, and platform innovations individually, the conceptualization of their combination in terms of their effect on the results of technology entrepreneurship is insufficient, and there is a lack of holistic conceptual frameworks (Dana et al., 2022; Singh et al., 2023). The majority of the empirical evidence is based on Asia, Latin America, or cross-country study, whereas not many studies focus on the African or Nigerian context. The infrastructural, regulatory, and cultural contexts in emerging markets in West Africa and especially Nigeria pose unique challenges that affect the adoption of innovations, and this is a rather important gap in the literature (Odey & Ebri, 2022; Mohammed et al., 2022).

Although DOI, RBV, and TIS offer powerful theoretical perspectives at the individual front, not

much has been done to consolidate these theories and formulate a holistic perspective of the way computing innovation leads to entrepreneurial results in the emerging markets. This lowers comprehension of how technology diffusion with strategic resources and innovation systems interacts in the development of entrepreneurships by the absence of a unified theoretical perspective (Bruton et al., 2008; Cao and Shi, 2021). Empirical research is mainly based on cross-sectional surveys or case studies, which are usually inadequate to establish the dynamic impacts of computing innovations with time. The use of longitudinal, multi-method or mixed-method approaches has been underused and this leads to a methodological gap that limits evidence on sustained entrepreneurial impact and adoption of innovation in emerging market contexts (Thukral et al., 2008; Udekwe and Iwu, 2024). These gaps demonstrate the necessity of conceptual research that incorporates multidimensional computing innovation, uses powerful theoretical prisms, and locates the research results in the realities of new markets, especially in Africa and Nigeria.

3.0 Research Methodology

3.1 Research Design

This research design will use the conceptual research design that is realized in the synthesis of the already existing knowledge, theoretical frameworks, and empirical evidence of the nexus between computing innovation and technology entrepreneurship in the risky markets. Conceptual research enables one to combine the multidimensional computing innovation constructs and the outcomes of the entrepreneurship, thus enabling the structured and theoretically based understanding without involving primary data collection. This method allows considering the overall effects of innovations like AI, digital platform, and ICT infrastructure on entrepreneurial performance through prior studies, theoretical conceptual frameworks, and models. The research design will focus on intensive literature review, critical analysis, and building of not only a conceptual model but also a theoretical framework of interconnections between independent and dependent variables in the new market environment (Yu et al., 2013; Govindarajan and Ramamurti, 2011).

3.2 Source of Data

The information used in this theoretical research is completely secondary and based on literature published in the form of journal articles, conference papers, working papers, books and reports that cover the topic of computing innovation and technology entrepreneurship. The choice of sources was grounded on the relevance, credibility, and contribution to the developing market situation. The main sources are those of world, African, and Nigerian views to give a holistic view of innovations in technology use, entrepreneurship, and a result of performance. In addition to this, the empirical studies were considered to explore AI, cloud computing, digital platforms, and ICT infrastructure with the purpose of bringing in a multi-dimensional facet of computing innovation. It is through this approach that one can make the study encompass both theoretical constructs and data and create concepts depending on them (Daisy, 2025; Gouvea et al., 2018).

3.3 Method of Review and Synthesis

The literature review and synthesis was conducted in a systematic and integrative manner. The key research was chosen, categorized and reviewed according to its significance to the innovation of computing, technology entrepreneurship and emergent market conditions. The review was done critically to consider conceptual framework, theoretical underpinnings and empirical findings to bring out relationships between the independent and dependent variables. Digital product innovation, process innovation, platform-based innovation, AI-driven innovation, and ICT infrastructure were identified and processed to map the multidimensional character of computing innovation. The insights were also combined with theoretical perspectives (DOI, RBV, TIS) to create an overall conceptual model to relate computing innovation to entrepreneurial performance. The synthesis focuses on gaps, trends, and practical implications that guide theory and practice (Yu et al., 2013; Govindarajan and Ramamurti, 2011).

3.4 Analytical Approach

The conceptual methodology of the proposed study is the qualitative thematic analysis and conceptual mapping of the secondary data to produce insights on computing innovation-technology entrepreneurship nexus. Through the

comparative analysis, correlations between main constructs were determined and arranged logically to create a conceptual framework that shows the role various dimensions of computing innovations play in the entrepreneurial performance. Also, cross contextual analysis was used to test the differences in emerging markets with special consideration on Africa and Nigeria, which shows how the contextual variables mediate or moderate the relationship between innovation and entrepreneurship. The analysis has also included the knowledge of previous empirical investigation to prove the validity of the proposed linkages as well as the areas of future studies. The result is a solid conceptual and theoretical framework that will inform knowledge on computing innovation as a strategic source of technology entrepreneurship in emerging economies (Daisy, 2025; Gouvea et al., 2018).

4.0 Findings of the Study

4.1 Key Findings on Computing Innovation

1. Positive Influence on Entrepreneurial Development: It was established that computing innovation (such as AI-based solutions, digital platforms, and process automation) played a significant role in increasing the level of technology startups and their level of scalability in emerging markets. Innovations also help in facilitating the innovation of new products and services by the entrepreneurs in addition to ensuring that efficiency in operations is maximized.

2. Digital Infrastructure as a Critical Enabler: It was observed that robust digital infrastructure (high speed internet, cloud computing and secure ICT infrastructure) were the contributing factors that expedited quicker adoption in computing innovations where startups could readily employ technology as a competitive advantage in the market.

3. Strategic Application of Technology Drives Competitive Advantage: It seemed that the start-ups, who applied the computing innovations in their strategic business operations were more responsive to the market and had a more definitive value propositions, which explains the need to align the application of technology with the business strategic purpose.

4. Emerging Market Contexts Pose Adoption Challenges: the lack of adequate technological awareness and the distribution of access to the digital solutions, including the lack of infrastructure in particular regions were mentioned as the main obstacles regarding the successful use of computing innovations in order to grow the entrepreneurship.

4.2 Key Findings on Technology Entrepreneurship

1. Enhanced Opportunity Recognition and Venture Creation: It is stated that the technology entrepreneurship in developing markets is supported by the ability of the technology entrepreneur emerging through the computing innovation to discover new business opportunities, process optimization and disruption solution.

2. Impact of Human Capital and Knowledge Capabilities: The ability, digital literacy and technological skills of founders and teams have a positive correlation with the performance of the entrepreneur and the accentuation of the significance of the value of lifelong learning and innovation-oriented attitude is emphasized.

3. Competitive Advantage Through Technology-Driven Strategies: The technology-driven based startups are more stable, more sustainable and more scaled thus they will be in position to survive the competition in the new market turbulent environment.

4. Influence of Institutional and Ecosystem Support: Availability of favorable policies, incubation programs and funds platforms have a huge positive impact on the rate of success and growth of technology entrepreneurs and systemic facilitators of the entrepreneurial ecosystem can be applicable.

4.3 Integrated Findings on the Nexus between Computing Innovation and Technology Entrepreneurship

1. Multidimensional Computing Innovation Strengthens Entrepreneurial Outcomes: Digital product innovation and platform-based solutions, process improvement, and AI use creates synergy and enhance the performance of startups and their survival in the long-term.

2. Technological Capabilities as a Strategic Resource: The computing innovation may be a strategic resource and help the startups to leverage the unique resources in the development of competitive advantage, operational capability and market expansion.

3. Digital Ecosystem Integration Promotes Entrepreneurial Growth: The computing innovation is embedded on good digital and institutional systems and technology entrepreneurship flourishes because it opens the path towards computing innovation to the knowledge systems, search systems and regulation systems.

4. Challenges and Enablers Are Interdependent: The Infrastructure availability, financial capacity, and regulatory environments moderate the adoption of innovations in computing, and in this context, technological, institutional, and human factors are interdependent and enable the achievement of technology entrepreneurship success.

5.0 Recommendations of the Study

5.1 Recommendations for Entrepreneurs

1. Invest in Continuous Digital Capability Development: To remain competitive, entrepreneurs must reinvest in computing innovations such as AI, cloud computing or data analytics via upskilling and training.

2. Leverage Strategic Technology Integration: When it comes to business, the entrepreneurs need to take into account computing innovation as a part of the strategies to be responsive, efficient and differentiate its products in the market.

3. Adopt Innovation-Driven Business Models: Startups are anticipated to implement business models which are malleable and expandable and capitalize on the applications of technology to make rapid change in response to market dynamics and demands of customers.

4. Engage with Digital Ecosystems: It is suggested that businesspeople should take action via incubators and technology hubs and knowledge networks in order to obtain resources, mentorships and investments.

5.2 Recommendations for Policymakers

1. Strengthen Digital Infrastructure: Governments are advised to invest in internet, cloud and ICT systems and infrastructure, which are also reliable to facilitate massive adoption of computing innovation.

2. Support Technology Entrepreneurship Programs: The policies should be applied to attract technology startups by granting and tax breaks as well as technology oriented regulatory frameworks.

3. Promote Digital Literacy and Capacity Building: The state initiatives to help the level of technological proficiency among business people and students can also encourage innovative oriented business.

4. Facilitate Access to Funding and Incubation: The policy makers should allow the business fraternity and the government to collaborate with one another so as to make sure that startups are accessible to venture capital and incubators.

5.3 Recommendations for Investors & Tech Incubators

1. Invest in Innovation-Driven Startups: There is the need to invest in the venture that is the most innovative in the field of computing to reap more returns and market shares.

2. Provide Technical Mentorship and Advisory Support: Incubators should offer advice to adopt new technologies and business models that are scalable.

3. Enable Ecosystem Connectivity: Investors and incubators are to facilitate connections between startups and potential partners, knowledge platforms and markets.

4. Encourage Risk-Tolerant Funding Models: Flexible investment forms may offer a way through which startups can explore new technologies without the pressure to make a quick turnover to make profits.

5.4 Recommendations for Future Research

1. Examine Sectoral Variations in Computing Innovation Adoption: Future research research can test sectoral differences in adoption of computing innovations and the resultant entrepreneurial performance.

2. Assess Longitudinal Impacts of Technology Adoption: It is possible to conduct studies to establish the long-term effects of computing innovation, in relation to the growth and sustainability of startups in the new markets.

3. Investigate Institutional and Cultural Moderators: Studies have to explore how the regulatory environment and culture and social norms moderate technology entrepreneurship strategies.

4. Develop Quantitative Validation of Conceptual Frameworks: It may be in the form of large-scale data which could be used in empirical research to validate the conceptual and theoretical frameworks, and ensure they are right

in testing the relationship between computing innovation and technology entrepreneurship performance.

6.0 Conclusion

The intertwined relationship between computing innovation and being an entrepreneur in technology in emerging economies was the topic of debate in this paper, and some of the valuable insights have been identified. Computing innovation, be it AI-solutions, digital platforms, process optimization and ICT infrastructure, comes out first as the driving force of creating startups, seeing the opportunity and scaling the venture. Second, the digital infrastructure and technological capabilities were defined as one of the facilitating factors that improve the performance of the startups and help them to achieve the stage of the operational effectiveness, competitive advantage, and market sensitivity. Third, the approaches which are based on technology enhance the performance and sustainability of the startups and institutional support, links with the ecosystem and human capital are significant in the success path of the technology entrepreneurs. Finally, the problem of the lack of digital literacy, the availability of infrastructure and situational limitations is also topical to emphasize the necessity to choose both the facilitators of technology and systemic facilitators to make sure that computing innovations are applied to their maximum to create the entrepreneurial sector. The findings of this article confirm the notion that computing innovation is not a supportive practice but a strategic resource that constitutes entrepreneurial competencies, competitive edge, and the viability of emerging markets over the long-term. When well incorporated with a strong human capital, institutional backing and integration with the ecosystem, technology propagation forms an environment where innovative projects can thrive even in challenging conditions in the market. Moreover, the nexus between the computing innovation and technology entrepreneurship supports the value of the multidimensional innovation adoption that involves digital products, AI, platforms, and process improvement. The current study identifies the need to have concerted capacity building, infrastructure growth, and policy support as a means of ensuring that the potential of the technology driven entrepreneurship is fully harnessed by the policy makers, investors, and the entrepreneurs themselves. Lastly, the use of computing innovations will be developed to form the core of creating resilient, adaptive, and globally competitive entrepreneurial ecosystem in the emerging economies.

REFERENCES

1. Abrokwah-Larbi, K. (2024). The nexus between customer value analytics and SME performance in emerging market: A resource-based view perspective. *Journal of Global Entrepreneurship Research, 14*(1), 26.
2. Aliyu Mohammed. (2023). A study on HR strategies for managing talents in global perspective. Paper submitted to the University of Belgrade, Technical Faculty in Bor, XIX International May Conference on Strategic Management (IMCSM23), Hybrid Event.
3. Aliyu Mohammed. (2023, May 11). An agile performance management system for achieving sustainable Industry 4.0. Paper presented at the One-Day Hybrid International Conference on Sustainability in Industry 4.0, MSNM Manel Srinivas Nayak Institute of Management (MSNIM) in association with Limkokwing University Malaysia.
4. Aliyu Mohammed. (2024). Investigating reskilling and up-skilling efforts in the information technology and software development sector: A case study of Kano State, Nigeria. Paper presented at the International Conference on Paradigm Shift Towards Sustainable Management & Digital Practices: Exploring Global Trends and Innovations.
5. Amoako, G., Omari, P., Kumi, D. K., Agbemabiase, G. C., & Asamoah, G. (2021). Conceptual framework—Artificial intelligence and better entrepreneurial decision-making: The influence of customer preference, industry benchmark, and employee involvement in an emerging market. *Journal of Risk and Financial Management, 14*(12), 604.
6. Aulakh, P. S., Kotabe, M., & Teegen, H. (2000). Export strategies and performance of firms from emerging economies: Evidence from Brazil, Chile, and Mexico. *Academy of Management Journal, 43*(3), 342–361.

7. Bilal, M., Xicang, Z., Jiying, W., Sohu, J. M., Akhtar, S., & Hassan, M. I. U. (2025). Digital transformation and SME innovation: A comprehensive analysis of mediating and moderating effects. *Journal of the Knowledge Economy, 16*(1), 1153–1182.
8. Bruton, G. D., Ahlstrom, D., & Obloj, K. (2008). Entrepreneurship in emerging economies: Where are we today and where should the research go in the future. *Entrepreneurship Theory and Practice, 32*(1), 1–14.
9. Cao, Z., & Shi, X. (2021). A systematic literature review of entrepreneurial ecosystems in advanced and emerging economies. *Small Business Economics, 57*(1), 75–110.
10. Chen, P., & Kim, S. (2023). The impact of digital transformation on innovation performance—The mediating role of innovation factors. *Heliyon, 9*(3).
11. Chen, Y., & Puttitanun, T. (2005). Intellectual property rights and innovation in developing countries. *Journal of Development Economics, 78*(2), 474–493.
12. Daisy, A. (2025). Exploring the nexus of entrepreneurial leadership and innovative disruption: A qualitative study. In *Transformational concepts and tools for entrepreneurial leadership* (pp. 123–152). IGI Global Scientific Publishing.
13. Dana, L. P., Salamzadeh, A., Mortazavi, S., & Hadizadeh, M. (2022). Investigating the impact of international markets and new digital technologies on business innovation in emerging markets. *Sustainability, 14*(2), 983.
14. Díaz-Arancibia, J., Hochstetter-Diez, J., Bustamante-Mora, A., Sepúlveda-Cuevas, S., Albayay, I., & Arango-López, J. (2024). Navigating digital transformation and technology adoption: A literature review from small and medium-sized enterprises in developing countries. *Sustainability, 16*(14), 5946.
15. Doganova, L., & Eyquem-Renault, M. (2009). What do business models do?: Innovation devices in technology entrepreneurship. *Research Policy, 38*(10), 1559–1570.
16. Eliakis, S., Kotsopoulos, D., Karagiannaki, A., & Pramatari, K. (2020). Survival and growth in innovative technology entrepreneurship: A mixed-methods investigation. *Administrative Sciences, 10*(3), 39.
17. Erdogan, M., & Yamaltdinova, A. (2019). A panel study of the impact of R&D on financial performance: Evidence from an emerging market. *Procedia Computer Science, 158*, 541–545.
18. Fannin, R. A. (2016). Innovation in emerging markets: Asia. In *Innovation in emerging markets* (pp. 51–71). Palgrave Macmillan UK.
19. Goldman, S. P., van Herk, H., Verhagen, T., & Weltevreden, J. W. (2021). Strategic orientations and digital marketing tactics in cross-border e-commerce: Comparing developed and emerging markets. *International Small Business Journal, 39*(4), 350–371.
20. Gouvea, R., Kapelianis, D., & Kassicieh, S. (2018). Assessing the nexus of sustainability and information & communications technology. *Technological Forecasting and Social Change, 130*, 39–44.
21. Govindarajan, V., & Ramamurti, R. (2011). Reverse innovation, emerging markets, and global strategy. *Global Strategy Journal, 1*(3–4), 191–205.
22. Gregorio, D. D., Kassicieh, S. K., & De Gouvea Neto, R. (2005). Drivers of e-business activity in developed and emerging markets. *IEEE Transactions on Engineering Management, 52*(2), 155–166.
23. Hussain, H., Jun, W., & Radulescu, M. (2025). Innovation performance in the digital divide context: Nexus of digital infrastructure, digital innovation, and E-knowledge. *Journal of the Knowledge Economy, 16*(1), 3772–3792.
24. Jawad, M., Naz, M., & Maroof, Z. (2021). Era of digital revolution: Digital entrepreneurship and digital transformation in emerging economies. *Business Strategy & Development, 4*(3), 220–228.
25. Jiang, X., Wang, X., Ren, J., & Xie, Z. (2021). The nexus between digital finance and economic development: Evidence from China. *Sustainability, 13*(13), 7289.
26. Kulkov, I., Ivanova-Gongne, M., Bertello, A., Makkonen, H., Kulkova, J., Rohrbeck, R., & Ferraris, A. (2023). Technology entrepreneurship in healthcare: Challenges and

opportunities for value creation. *Journal of Innovation & Knowledge, 8*(2), 100365.

27. Kumar, M. A., Mohammed, A., Raj, P., & Sundaravadivazhagan, B. (2024). Entrepreneurial strategies for mitigating risks in smart manufacturing environments. In *Artificial Intelligence Solutions for Cyber-Physical Systems* (pp. 165–179). Auerbach Publications.
28. Lawal, T. O., Abdulsalam, M., Mohammed, A., & Sundararajan, S. (2023). Economic and environmental implications of sustainable agricultural practices in arid regions: A cross-disciplinary analysis of plant science, management, and economics. *International Journal of Membrane Science and Technology, 10*(3), 3100–3114. https://doi.org/10.15379/ijmst.v10i3.3027
29. Liu, X., Latif, A., Maray, M., Shah, A. M., & Ramzan, M. (2025). Big Data meets Jugaad: Cultural innovation strategies for sustainable performance in resource-constrained developing economies. *Sustainability, 17*(15), 7087.
30. Mahadea, D., & Kaseeram, I. (2022). Exploring the relationship of patented innovation to entrepreneurship in selected countries: Theoretical and empirical perspectives. In *Government incentives for innovation and entrepreneurship: An international experience* (pp. 61–86). Springer.
31. Maijamaa, B., et al. (2023). Technology-driven social innovation in the emerging market. In *Fostering sustainable businesses in emerging economies* (pp. 1–21). Emerald Publishing Limited.
32. Manolova, T. S., Eunni, R. V., & Gyoshev, B. S. (2008). Institutional environments for entrepreneurship: Evidence from emerging economies in Eastern Europe. *Entrepreneurship Theory and Practice, 32*(1), 203–218.
33. Marshall, M., Ockwell, D., & Byrne, R. (2017). Sustainable energy for all or sustainable energy for men? Gender and the construction of identity within climate technology entrepreneurship in Kenya. *Progress in Development Studies, 17*(2), 148–172.
34. Marvel, M. R., & Lumpkin, G. T. (2007). Technology entrepreneurs' human capital and its effects on innovation radicalness. *Entrepreneurship Theory and Practice, 31*(6), 807–828.
35. Mohammed, A. (2023). Analyzing global impacts and challenges in trade management: A multidisciplinary study. *Economics, Commerce and Trade Management: An International Journal (ECTU), 3*.
36. Mohammed, A. (2023). Navigating the digital marketplace: Strategies for entrepreneurship in electronic commerce. *Computer Applications: An International Journal (CAIJ), 10*(3/4). https://aircconline.com/caij/papers/10423caij06.pdf
37. Mohammed, A. (2023). Strategic utilization of management information systems for efficient organizational management in the age of big data. *Computer Applications: An International Journal (CAIJ), 10*(3/4). https://aircconline.com/caij/papers/10423caij02.pdf
38. Mohammed, A., & Sundararajan, S. (2023). Analyzing policy challenges in the financial sector: Implications for effective financial management. In *Digitalization of the banking and financial system* (pp. 32–43).
39. Mohammed, A., & Sundararajan, S. (2023). Emerging trends of business transformation. *MSNIM Management Review, 1*, 36–44.
40. Mohammed, A., & Sundararajan, S. (2023). Exploring the dynamic interplay between startups and entrepreneurship: A conceptual analysis. In *Digital Startup: A multidisciplinary approach in technology and sustainable development* (pp. 1–7).
41. Mohammed, A., Jakada, M. B., & Lawal, T. O. (2023). Examining the impact of managerial attitude on employee performance and organizational outcomes: A conceptual analysis. *IJBRE – International Journal of Business Review and Entrepreneurship, 4*(1).
42. Mohammed, A., Shanmugam, S., Subramani, S. K., & Pal, S. K. (2024). Impact of strategic human resource management on mediating the relationship between entrepreneurial ventures and sustainable growth. *Serbian Journal of Management*. https://doi.org/10.5937/IMCSM24044M

43. Mohammed, A., Sundararajan, S., & Lawal, T. (2022). The effect of training on the performance of small and medium-sized enterprises (SMEs) in Kano Metropolis. *Seybold Report, 17*(6).
44. Nguyen, P. N. D., & Nguyen, H. H. (2024). Examining the role of family in shaping digital entrepreneurial intentions in emerging markets. *Sage Open, 14*(1).
45. O'Connor, G. C., & Rice, M. P. (2013). New market creation for breakthrough innovations: Enabling and constraining mechanisms. *Journal of Product Innovation Management, 30*(2), 209–227.
46. Odey, F. I., & Ebri, E. W. (2022). Disruptive technology and entrepreneurship innovation in emerging economies: The Nigerian experience. *World, 2579*, 0544.
47. Pavaloiu, I. B., Drăgoi, G., Vasilățeanu, A., Goga, N., Marian, C. V., Mitrea, D. A., Bratosin, I. A., Neagu, A. M., Guică, I., Trifan, L., & Alecu, A. A. (2021). Computing innovation for technology entrepreneurship. In *INTED2021 Proceedings* (pp. 6909–6914). IATED.
48. Phale, K., Li, F., Adjei Mensah, I., Omari-Sasu, A. Y., & Musah, M. (2021). Knowledge-based economy capacity building for developing countries: A panel analysis in Southern African Development Community. *Sustainability, 13*(5), 2890.
49. Putra, J. M., Karundeng, D. R., Gofur, A., Tresnadjaja, R., Suhara, A., Sukmayadi, S., & Sopyan, A. (2024). Entrepreneurship in the era of society 5.0: Navigating digitalization for innovation and growth. *Journal of Sustainable Tourism and Entrepreneurship, 6*(1), 1–3.
50. Ratten, V. (2014). Future research directions for collective entrepreneurship in developing countries: A small and medium-sized enterprise perspective. *International Journal of Entrepreneurship and Small Business, 22*(2), 266–274.
51. Rehman, K., Lim, K. B., Yeo, S. F., Saif, N., & Ameeq, M. (2025). The nexus of entrepreneurial leadership and entrepreneurial success with a mediation of technology management processes: From the perspective of the small-and medium-sized enterprises of Khyber Pakhtunkhwa, Pakistan. *Sustainability, 17*(3), 882.
52. Shafi, M., Sarker, M. N., & Junrong, L. (2019). Social network of small creative firms and its effects on innovation in developing countries. *Sage Open, 9*(4).
53. Shanmugam Sundararajan, S., Rajkumar, T., Senthilkumar, T., Mohammed, A., & Prince Martin, V. (2024). An analytical study on factors influencing individual investors' investment decisions on selecting private commercial banks at Kano City in Nigeria. *European Chemical Bulletin, 12*(1), 3706–3717. https://doi.org/10.31838/ecb/2023.12.s1-B.372
54. Shibin, K. T., Dubey, R., Gunasekaran, A., Luo, Z., Papadopoulos, T., & Roubaud, D. (2018). Frugal innovation for supply chain sustainability in SMEs: Multi-method research design. *Production Planning & Control, 29*(11), 908–927.
55. Singh, S., Singh, S., & Dhir, S. (2023). The evolving relationship of entrepreneurship, technology, and innovation: A topic modeling perspective. *The International Journal of Entrepreneurship and Innovation.*
56. Sundararajan, S., & Mohammed, A. (2022). Entrepreneurial opportunities for women. In *Proceedings of the conference on Gender Equality and Women Empowerment* (Special Issue 1, pp. 112–115). European Journal of Humanities and Educational Advancements.
57. Sundararajan, S., & Mohammed, A. (2023). Evaluation of teachers – History to current era. *Samzodhana – Journal of Management Research, 13*(2). http://eecmbajournal.in
58. Sundararajan, S., Mohammed, A., & Lawal, T. (2023). Role of human resource management in the post COVID-19 era: Experiential study. *Bio Gecko: A Journal for New Zealand Herpetology, 12*(2).
59. Sundararajan, S., Mohammed, A., & Senthil Kumar, S. (2023). A perceptual study on the impact of agile performance management system in information technology companies. *Scandinavian Journal of Information Systems, 35*(1), 3–38. https://doi.org/10.5281/SJIS.77516

60. Sundararajan, S., Mohammed, M. A., & Senthil Kumar, S. (2022). A perceptual study on impact of agile performance management system in the information technology companies. *Scandinavian Journal of Information Systems, 34*(2), 3–38.
61. Tessler, S., Barr, A., & Hanna, N. (2003). National software industry development: Considerations for government planners. *The Electronic Journal of Information Systems in Developing Countries, 13*(1), 1–17.
62. Thukral, I. S., Von Ehr, J., Walsh, S., Groen, A. J., Van Der Sijde, P., & Akmaliah Adham, K. (2008). Entrepreneurship, emerging technologies, emerging markets. *International Small Business Journal, 26*(1), 101–116.
63. Tripathi, S. S., & Brahma, M. (2018). Technology entrepreneurship in emerging markets: An exploration of entrepreneurial models prevalent in India. *Technology Innovation Management Review, 8*(1).
64. Udekwe, E., & Iwu, C. G. (2024). The nexus between digital technology, innovation, entrepreneurship education, and entrepreneurial intention and entrepreneurial motivation: A systematic literature review. *Education Sciences, 14*(11), 1211.
65. Van Hoang, D., Thi Hien, N., Van Thang, H., Nguyen Truc Phuong, P., & Thi-Thuy Duong, T. (2025). Digital capabilities and sustainable competitive advantages: The case of emerging market manufacturing SMEs. *Sage Open, 15*(2).
66. Xie, X., Wu, Y., & García, F. J. S. (2021). Gendered linguistic structures and the innovation performance of new ventures in emerging countries: The moderating effects of digitalisation and the entrepreneurial ecosystem. *International Journal of Technology Management, 87*(1), 46–77.
67. Yan, H. D. (2013). Entrepreneurship, competitive strategies, and ascending global brands from Taiwan: Lessons for emerging markets. *International Journal of Business and Globalisation, 10*(3), 325–344.
68. Yu, Y., Dong, X. Y., Shen, K. N., Khalifa, M., & Hao, J. X. (2013). Strategies, technologies, and organizational learning for developing organizational innovativeness in emerging economies. *Journal of Business Research, 66*(12), 2507–2514.
69. Zhang, Z., Jin, J., Li, S., & Zhang, Y. (2023). Digital transformation of incumbent firms from the perspective of portfolios of innovation. *Technology in Society, 72*, 102149.
70. Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on technology-and market-based breakthrough innovations. *Journal of Marketing, 69*(2), 42–60.