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Emerging Technology Entrepreneurship Trends and Performance of Multinational Organisations in Nigeria

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Abstract

Despite the key role in driving economic development using investment by multinational organisations, such as the creation of jobs, and technology transfer, many multinational organisations in Nigeria face infrastructure shortfall, weak institutional setup, and socio-economic instability. This study aims to examine emerging technology entrepreneurship trends and the performance of multinational organisations in Nigeria by closing these gaps by exploring the link between entrepreneurial orientation, technology infrastructure, human capital and the performance of multinational organisations in Nigeria. The study adopts a descriptive survey design to investigate the impact of emerging technology entrepreneurship trends on the performance of multinational organisations. The study targets operational and managerial employees of multinational companies in the telecommunication sector with subsidiaries in Osun State, Nigeria. The study employs a systematic random sampling technique. Given the infinite population approach, the sample size is predetermined as 385 respondents based on Cochran's formula (1977). A structured questionnaire was designed to gather relevant information. Descriptive and inferential statistics were utilised in the study for the data techniques. The results reveal that entrepreneurial orientation significantly impacts the performance of multinational organisations. Technology infrastructure was not statistically significant and human capital emerged as a critical predictor of organisational performance. The research recommended that multinational organisations operating in emerging markets, such as Nigeria, should tailor their strategies to address local challenges.

1. Introduction

Emerging technologies are developing at breakneck speeds, with businesses and economies on the other side of a global disruption facing upheaval. This transformation has significant repercussions for multinational organisations increasingly using technology-driven entrepreneurship to ensure growth, improve performance, and build strategic advantages. Emerging technologies entrepreneurship involves exploring and developing new, innovative technologies to create ventures and improve business processes while disrupting traditional markets through the adoption of such technology (Jafari-Sadeghi et al., 2021). This shift is occurring through technologies

like artificial intelligence (AI), blockchain, big data analytics, the Internet of Things (IoT), and augmented reality (AR), which enable organisations to identify and capitalise on new opportunities in an ever-changing world. Globalisation has influenced the world's economies by opening more markets for companies and entrepreneurs, fostering competition and innovation, and facilitating greater internationalisation of products (Sudirjo, 2023). Studies on emerging market companies highlight leveraging external knowledge resources to strengthen internal innovation processes. A key driver of growth for companies is the importance of innovation in meeting the specific needs of emerging markets (Anand et al., 2021). Consequently, some research has explored ways to enhance the desired impact of business models while reducing the risks associated with technology development, aiming for a more comprehensive understanding of the factors involved in sustainable and frugal innovation (Chukwuka, 2024). From this perspective, frugal innovation in emerging markets primarily involves reducing costs to meet resource-constrained consumer expectations, and second, addressing adequate levels and characteristics to meet specific needs. Furthermore, digital technologies have provided tangible and intangible benefits, facilitating the development of business model innovation driven by digitalisation (Bresciani et al., 2021). This encourages businesses to increase profits and improve performance to deliver expected results to customers.

In today's complex, highly dynamic environment with global competition, cultural diversity and regulatory challenges are major issues that multinational organisations face in their operations. In such contexts, MNCs are increasingly integrating entrepreneurial practices with cutting-edge technologies to foster innovation, improve efficiency, and adapt to changing market demands (Diseiye et al., 2024). These organisations utilise technologies to achieve sustainable growth, respond effectively to disruptive forces, create compelling customer experiences, and leverage emerging technology entrepreneurship to accomplish these goals. In the Nigerian context, a multinational organisation's ability to fully capitalise on emerging technology entrepreneurship is hindered by unique challenges. Nonetheless, despite their vital role in driving economic development through investment by multinational organisations, job creation, and technology transfer, many face infrastructure shortfalls, weak institutional frameworks, and socio-economic instability. One of the difficulties these issues pose is the challenge of implementing emerging technologies and embedding entrepreneurial orientation into their operations.

Additionally, a pressing issue of lacking skilled human capital persists. Many firms face impossible situations with sudden shortages of the technical expertise required to operate and maintain highly advanced technological systems. This deficiency hampers innovation capabilities and, consequently, limits the potential to gain a competitive advantage. Similar to robust technology infrastructure, a lack of technology creates a barrier to adopting and utilising various emerging technologies, resulting in sub-optimal operational efficiency and performance. While much has been written about the importance of entrepreneurial orientation, technology infrastructure, and human capital for organisational success, their combined impact on the performance of multinational organisations in Nigeria remains underexplored. Existing studies tend to examine some of these factors in isolation or focus on developed economies, thus overlooking their interaction under Nigeria's challenging socio-economic and regulatory environment. Although research broadly affirms the significance of emerging technology entrepreneurship for organisational performance worldwide, studies on the use and impact of emerging technology entrepreneurship in Nigeria, especially within multinational organisations, are virtually absent. Specifically, the performance of multinationals in Nigeria has not been systematically analysed in terms of the interplay between entrepreneurial orientation, technology infrastructure, and human capital. Furthermore, existing literature pays limited attention to how these factors enable multinational organisations to navigate Nigeria's precarious business landscape and seize growth opportunities. This study aims to fill these gaps by examining the relationship between entrepreneurial orientation, technology infrastructure, human capital, and the performance of multinational organisations in Nigeria. Specifically, it aims to:

i. Investigate the influence of entrepreneurial orientation on the performance of Multinational Organisations in Nigeria.
ii. Assess the role of technology infrastructure in enhancing the performance of multinational organisations in Nigeria.
iii. Analyse the impact of human capital on the performance of multinational organisations in Nigeria.

2. Literature Review

2.1 Emerging Technology Entrepreneurship Trends

Emerging technology-related entrepreneurship involves generating, developing, and leveraging entrepreneurial opportunities from innovative disruptive technologies for market utilisation, efficiency, enabling, and contributing value (Sutrisno et al., 2023). It likely stems from the evolution of various significant regions, including advances in artificial intelligence (AI), blockchain, Internet of Things (IoT), biotechnology, and others. As Diseiye et al. (2024) mention, emerging technologies are innovations that continue to develop with inventions capable of transforming major employment sectors and societies. According to Rotolo et al. (2015), emerging technologies

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are characterised by "novelty, relatively fast growth, potential for societal impact, and uncertainty regarding their development and adoption." These technologies are all transformative, sometimes altering how activities are conducted within ecosystems or societies. Such technologies include AI, quantum computing, advanced robotics, and nanotechnology. The intersection of emerging technology and entrepreneurial practice is termed Emerge Technology Entrepreneurship. Giones and Brem (2017) define it as "the application of entrepreneurial principles to identify and exploit opportunities created by disruptive and innovative technologies to address existing challenges or create new markets." Additionally, this form of entrepreneurship involves adopting technology and creating business models and solutions that respond to shifting market demands.

Today, blockchain, AI, IoT, and ML are transforming and disrupting business processes, turning entrepreneurs into creators of unsupervised products, that is, using predictive analytics and intelligent automation (Rane et al., 2023). However, startups like OpenAI and DeepMind have made powerful capabilities available and have overshadowed blockchain technology in decentralised finance (DeFi). If blockchain entrepreneurship can revolutionise entire industries with the advent of transparency, security, and transaction efficiency, it will have a prosperous future. The result of this convergence, IoT, enables device connection to the internet, real-time data collection, and analysis of this data to support developments such as connected healthcare, smart cities, and precision agriculture. Advances in biotechnology and life sciences are driving a surge of entrepreneurial solutions to challenges in healthcare, agriculture, and environmental sectors, including gene editing, bioinformatics, and synthetic biology (Kumar, 2020).

Emerging technology entrepreneurship trends are relevant to the performance of multinational organisations in Nigeria. For these telecommunications, finance, and healthcare companies, disruptive technologies can enhance operations, improve customer experience, and open new market opportunities. Emerging technologies such as AI and IoT make data-driven strategies achievable, while blockchain safeguards transactions, ensuring they are secure and transparent (Rane et al., 2023). Biotechnology innovations that aim to address local health and agricultural challenges have also introduced new hurdles into healthcare and agriculture while contributing to socio-economic development (Fatima et al., 2024).

Entrepreneurial orientation, technology infrastructure, and human capital are crucial for emerging technology entrepreneurship. Technological opportunities are identified and exploited through an entrepreneurial orientation characterised by innovativeness, proactiveness, risk-taking, and a combination of technological innovativeness and risk tolerance. MLS provides the availability and accessibility of technology infrastructure to facilitate ready access to essential tools and platforms for creating and operating new and improved business methods. Human capital encompasses the skills, knowledge, and expertise necessary for creativity, problem-solving, and strategic decision-making. Therefore, they offer the ideal mix of upcoming technologies and entrepreneurial practices to boost the competitive advantage and performance of multinational organisations in Nigeria. Emerging technology entrepreneurship is an exciting and dynamic domain driven by innovation and the potential to disrupt industries. Integrating technological innovations with entrepreneurial practices to address global challenges and stimulate economic growth is vital for sustaining value. It is not enough to understand technology in conjunction with innovation; policymakers and educators must also foster innovation-friendly ecosystems. The focus on interdisciplinary collaboration, long-term vision, and perspectives from which emerging technology entrepreneurship can unveil new opportunities for change and leverage prospects in an interconnected society. In this market, emerging technology entrepreneurship enhances the performance of multinational organisations by enabling them to operate at lower costs, innovate more rapidly, and tackle local market challenges. This entrepreneurial strategy combines advanced technology and strategic business practices to create value, reduce costs, and strengthen competitive capacity in volatile and untapped markets.

2.2 Performance of Multinational Organisations

International business and management studies are vital for the performance of multinational organisations. Multinational enterprises operate across multiple countries, utilising global resources, markets, and capabilities to achieve strategic goals. Assessing their performance involves monitoring financial, operational, and strategic results in different geographical regions. A multinational organisation is defined as "a firm that has significant operations in multiple countries but is managed from one (home) country" (Litvinenko et al., 2022). These organisations integrate and coordinate activities across borders to attain global efficiency and respond locally (Pananond et al., 2020). In this context, performance refers to "the extent to which a company achieves its objectives, including financial profitability, market share, and sustainable growth across its global operations" (Zhou et al., 2022). The measurement of these outcomes, such as profitability, revenue growth, and operational efficiency, is known as performance measurement. This framework from Ghoshal and Bartlett (1990) focuses on the differences between global integration (efficiency standardisation) and local responsiveness (local market adaptation). Balancing these demands is often essential to a multinational organisation's success. Multinational organisations face inherent challenges and opportunities when responding to cultural diversity within their operations. Performance is partly driven by innovation. Chit and Vasudevan (2024) argue that multinational

organisations must navigate complex governance systems across countries, which can influence their operational effectiveness. Often, multinational organisations (MNCs) perform better due to their access to diverse markets and economies of scale. Allen et al. (2025) examined firms engaged in cross-country operations and found that those with global footprints tend to enjoy greater profitability and faster revenue growth, benefiting from their ability to optimise global resources and reduce dependency on individual markets. Telecommunications multinational organisations such as MTN and Airtel in Nigeria have consistently reported revenue growth through penetrating underserved markets and adopting innovative technologies (Agbai & Okey, 2024). Both centralised decision-making and decentralised execution enable multinational organisations to operate efficiently—adapting to local conditions while maintaining global standards. In the oil and gas sector, companies like Shell and ExxonMobil have lowered costs through sophisticated supply chain management and technological adoption (Naisa et al., 2024). Vahdat's (2022) research highlights multinational organisations as leaders in technological innovation, largely due to their extensive networks and capacity to source information from diverse regions. Rezaei et al. (2021) note that human capital development positively influences organisational performance, as skilled employees foster innovation and operational efficiency.

Many multinational companies in the financial sector, like Standard Chartered, have implemented large-scale in-house training and upskilling programmes to enhance employee performance and increase customer satisfaction. Technology has been key to gaining a competitive advantage in global markets. Cutting-edge infrastructure such as 5G networks has been deployed by telecommunications MNCs, resulting in improved service quality and a larger customer base. Implementing sustainability initiatives and CSR activities will improve the performance of multinational organisations, as they help rebuild their reputation and community ties. According to Jung and Im (2023), CSR practice helps boost financial performance by fostering trust in stakeholder relationships. Multinational organisations such as Nestlé Nigeria have established programmes focusing on water conservation and nutrition education, strengthening their brand and supporting long-term profitability. The performance of multinational organisations is shaped by a complex interaction of factors, including market strategies, cultural diversity, innovation, and institutional contexts. By using comprehensive performance measurement frameworks and adopting flexible strategies, multinational organisations can achieve sustainable growth and competitiveness in the global marketplace.

2.3 Entrepreneurial Orientation and The Performance of Multinational Organisations

The strategic framework of Entrepreneurial Orientation (EO) is regarded as crucial in helping organisations succeed in dynamic and highly competitive markets. Economic instability, cultural diversity, and the complexity of the regulatory environment present unique challenges to multinational organisations operating in Nigeria. It is important to understand how entrepreneurial orientation influences their performance in facing these challenges to support such growth. Entrepreneurial orientation is an organisation' s strategic stance, which manifests in specific behaviours and processes that foster innovation, risk- taking, and proactivity. Donbesuur et al. (2020) define entrepreneurial orientation as "the processes, practices, and decision- making activities that lead to new entry or initiatives." It is typically measured through five dimensions: innovativeness, proactiveness, risk- taking, competitive aggressiveness, and autonomy. There is consistently a positive relationship between entrepreneurial orientation and organisational performance. Donbesuur et al. (2020) find, among other things, that entrepreneurial opportunity discovery fully mediates the relationship between entrepreneurial orientation and new venture performance, and confirm that this indirect effect is strengthened in the presence of business networking and institutional support.

Based on a meta- analysis, Wahyuni and Sara (2020) report that entrepreneurial orientation positively influences performance across all industries and business contexts. The results from Basco et al. (2020) indicate that an overall positive effect of entrepreneurial orientation on firm performance is confirmed by using the structural equation model PLS- SEM, regardless of firm context. Similarly, they emphasise that entrepreneurial orientation enhances the firm' s ability to innovate, respond to markets, and become profitable, requiring entrepreneurial behaviour for emerging markets. High entrepreneurial orientation firms, as demonstrated by Lofthouse and Schaefer (2024), can better seize local opportunities and avoid local risks. Entrepreneurial orientation also fosters a generative tendency within much of Nigerian society, which multinational organisations leverage to adapt to market regulatory changesS. Ademola et al. (2024) investigated the impact of entrepreneurial orientation on the performance of Nigerian firms, revealing a highly positive correlation. The analysis identified factors such as innovativeness and proactiveness that strongly impact market performance. Moreover, Naisa et al. (2024) found that multinational organisations engaged in entrepreneurial orientation practices grew faster and had more engaged employees. Findings indicate that entrepreneurial orientation is a significant determinant of multinational organisations' performance in Nigeria. This is supported by creating the necessary environment for innovation, proactiveness, and risk-taking activities to help multinational organisations overcome the challenges of the Nigerian market and ensure sustainable growth within the local market. Indeed, entrepreneurial orientation

is subject to constraints resulting from the need to adapt to local conditions and overcome regulatory and infrastructural barriers.

H_1: Entrepreneurial orientation significantly and positively influences the performance of multinational organisations.

2.4 Technology Infrastructure in Enhancing the Performance of Multinational Organisations

In this 21st century, technology infrastructure has become a vital enabler of organisational performance, especially for multinational organisations operating in a highly dynamic and competitive environment such as Nigeria. Technology infrastructure includes physical and electronic resources that support organisation operations, communication, and strategic initiatives (Awaludin et al., 2024). As multinational organisations in Nigeria work to overcome various operational challenges, improve efficiency, and achieve sustainable growth, a robust technology infrastructure provides the foundation for such enterprises to scale technologically, becoming more efficient and competitive. Technology infrastructure encompasses hardware, software, networks, and data centres that collectively enable organisations to store, process, and exchange information effectively. McKay and Brockway (1989) define technology infrastructure as "a set of shared, tangible, and intangible resources that underlie technology-enabled business processes and services" (Chen et al., 2024). Nonetheless, empirical research has demonstrated that technology infrastructure is linked to organisational performance. Findings from Tsou and Chen (2023) indicate that digital technology usage positively influences digital transformation strategies, organisational innovation, and ultimately, firm performance.

Additionally, digital technology usage played a full mediating role between digital transformation strategy, organisational innovation, and firm performance. According to Chege et al. (2020), investments in information technology have a very strong impact on productivity and innovation. Azeem et al. (2021) also emphasised that the strategic use of technology infrastructure creates a competitive advantage across industries. Studies specific to Nigeria highlight the transformative potential of technology infrastructure for MNCs. In Martínez-Caro et al. (2020), results show that developing value activities through business digitisation can be enhanced, but only if they include a digital organisational culture. This research argues that firms which define the managerial culture that best supports their digital strategy will perform better. Within digital transformation, Hendrawan et al. (2024) identified other opportunities for developing MSMEs, such as improved operational efficiency in resource use, access to open markets, and data analysis for better decision-making. Hendrawan et al. (2024) state that digital transformation also provides significant opportunities for Msmes, including better operational efficiency, broader market access, and the capacity to analyse data for improved decisions.

Technology Infrastructure is an important resource for the organisational performance of multinational organisations in Nigeria. By investing in advanced systems to overcome local challenges, multinational organisations will gain operational efficiency, market responsiveness and innovation. Yet, to reap these benefits, strategic planning, collaboration and capability building at the local level must be incorporated. Technology infrastructure will likely play an increasingly meaningful role in shaping multinational organisations performance in Nigeria.

H_2: Technology infrastructure has a significant role in enhancing the performance of multinational organisations.

2.5 Human Capital on the Performance of Multinational Organisations in Nigeria

Human capital comprises employees' total skills, knowledge, and abilities. It is a crucial driver of organisational performance and competitive advantage, particularly for multinational organisations operating in dynamic markets like Nigeria. Human capital enables innovation, adaptation to local contexts, and the achievement of strategic objectives. It represents the economic value associated with the knowledge, skills, and competencies employees bring to an organisation. Goldin (2024) defined human capital as 'the stock of skills and knowledge which leads to the performance of labour to produce economic value.' It is widely acknowledged that human capital influences organisational performance. It is a vital resource through which firms attain superior results via innovation, efficiency, and adaptability, as Marchiori et al. (2021) suggest. Empirical research on human capital's impact on organisational performance shows that investments in high-performance work systems—including employee training and development—yield significant productivity and profitability benefits, as Abugre and Nasere (2020) discovered. Kurdi et al. (2020) noted that firms with skilled employees tend to have higher customer satisfaction and better financial outcomes. The availability and quality of human capital vary considerably across Nigerian industries. Studies indicate that multinational organisations with effective human capital development programmes tend to perform better than others. According to Joel and Oguanobi (2024), multinational organisations that invest in employee training and leadership development are more operationally efficient. Omoyele and Olabisi (2020) found that Nigerian subsidiaries of multinational corporations exhibit a positive relationship between workforce diversity and innovation. Having skilled and knowledgeable employees'

enables quicker task completion, reduces operational costs, and enhances output. Human capital fosters process improvements and organisational agility. It drives innovation by promoting creativity and a culture of knowledge sharing within organisations. Employees with diverse skills and experience develop new products and services tailored to local markets. The organisational performance of multinational organisations in Nigeria depends heavily on human capital. Employee engagement and investments in education and training can serve as key drivers of success. Nonetheless, addressing issues such as skill gaps, brain drain, and systemic inefficiencies requires concerted efforts from all stakeholders. Given Nigeria's significance as a market for global businesses, it remains strategic to invest in human capital.

H_3: Human capital has a positive and significant role in the performance of a multinational organisation.

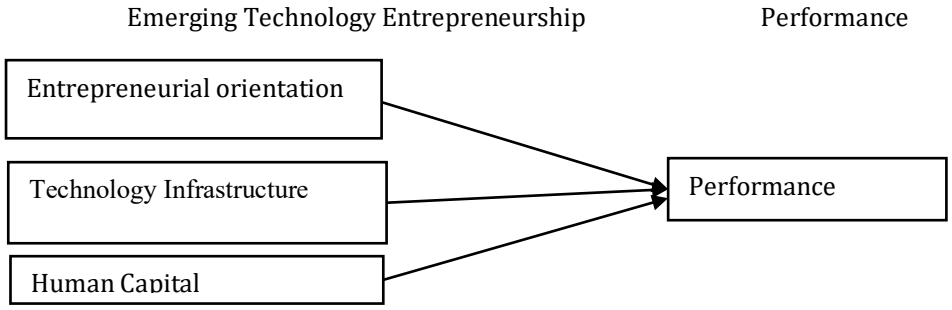

Fig. 1 *Conceptual framework*

2.6 Theoretical Review

The Resource-Based View (RBV) is a strategic management framework that emphasises a firm's internal resources as the foundation of sustainable competitive advantage. Proposed by Barney (1991), RBV suggests that when an organisation's resources and capabilities are valuable, rare, inimitable, and non-substitutable (VRIN), they can drive exceptional performance. Consequently, RBV plays a central role in explaining how multinational corporations (MNCs) operating in dynamic environments leverage unique resources, such as capabilities, to counter environmental pressures and capitalise on opportunities. A firm's entrepreneurial orientation, which is a strategic stance, refers to a firm that is innovative, proactive, and highly willing to take risks (Lumpkin & Dess, 1996). These qualities enable a firm to identify opportunities, innovate, and adapt within a competitive marketplace. Under RBV, entrepreneurial orientation is considered an intangible resource that can provide a competitive advantage when combined with complementary organisational capabilities. Ijatuyi and Akanbi (2024) assert that Nigerian multinational organisations with a strong entrepreneurial orientation achieve higher levels of innovation performance and profitability.

The Entrepreneurial Orientation (EO) relates to the Resource-Based View (RBV) theory by guiding how firms utilise potentially valuable internal resources, such as human capital and infrastructure, to gain a competitive advantage. EO comprises innovativeness, proactiveness, and risk-taking, which motivate firms to leverage and develop their original resource base accordingly. The RBV posits that skilled, knowledgeable, and creative employee—human capital—can become a valuable and inimitable resource when combined with an entrepreneurial orientation that fosters innovation and initiative. Similarly, infrastructure assets, such as advanced technology systems, efficient supply networks, or physical structures, can form part of a strategy when employed through proactive strategies and bold decision-making. Through implementing an entrepreneurial orientation within the RBV framework, multinational organisations in Nigeria can utilise their entrepreneurial capabilities to deliver value-added contributions despite external market challenges. Technology infrastructure encompasses physical and digital assets that ensure organisations operate efficiently—hardware, software, networks, and data management systems all fall within this scope. Effective integration of global operations with local market responsiveness is vital for the strong technology infrastructure of multinational organisations. In Nigeria, multinationals boasting superior technology infrastructure have outperformed their competitors in terms of market responsiveness and customer satisfaction (Ijatuyi & Akanbi, 2024). This underscores RBV's emphasis on tangible resources—such as technology infrastructure—that are essential for enhancing innovation, customer experience, and operational excellence. Human capital refers to the skills, knowledge, competencies, and attributes that employees contribute to an organisation. It is a key driver of innovation, productivity, and organisational resilience. Ochala (2024) demonstrated that investments in employee training and development positively influence managerial performance in Nigerian multinational organisations. Human capital has the potential to become a strategic resource for these organisations, helping them perform more effectively in Nigeria's complex and dynamic business environment.

The Resource-Based View (RBV) provides a solid theoretical framework for explaining the performance of multinational organisations in Nigeria. When applied effectively, strategic resources, entrepreneurial orientation, technological infrastructure, and human capital lead to superior performance. Multinational organisations succeed in this challenging business environment in Nigeria by maximising opportunities through investments in these areas and adhering to RBV principles.

3. Methodology

The study employs a descriptive survey design to investigate emerging technology entrepreneurship trends and their impact on the performance of multinational organisations. This approach is ideal for analysing trends, behaviours, and performance outcomes based on primary data collection. The study targets operational and managerial employees of multinational companies in the telecommunications sector with subsidiaries in Osun State, Nigeria, including MTN, Globacom, Airtel, ZTE Corporation, and Etisalat. These employees adopt, manage, and utilise technology-driven entrepreneurial innovations, influencing organisational performance. The research utilises a self-structured questionnaire. The study employs a systematic random sampling technique to ensure unbiased and representative participation from operational and managerial employees in the telecommunications sector. This technique is appropriate for capturing a representative cross-section of operational and managerial employees across the identified multinational subsidiaries. Given the infinite population approach, the sample size is predetermined as 385 respondents based on Cochran's formula (1977). A self-structured questionnaire was designed to gather relevant information. The questionnaire employed a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to ensure consistency in data analysis. Descriptive and Inferential Statistics were utilised in the study for the data techniques. Multinomial regression was used to test the hypotheses, and statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS) 27 to ensure robust and reliable results.

4. Results

The descriptive result of the data is presented below.

Table 1 *Entrepreneurial orientation*

	N	Minimum	Maximum	Mean	Std. Dev
My organisation frequently takes the initiative to outperform competitors by introducing new services	385	1	5	3.98	1.106
We are quick to act on new opportunities before competitors do	385	1	5	3.94	1.139
My organisation invests significantly in research and development to innovate.	385	1	5	3.93	1.062
My organisation often engages in projects with uncertain outcomes but high potential returns.	385	1	5	4.19	.980
Valid N (listwise)	385				

Source: SPSS 27 output

This table presents data on entrepreneurial orientation based on responses from participants. The' Initiative to Outperform Competitors' indicates that respondents agree their organisations frequently take the initiative to outperform rivals by introducing new services, with a Std. Deviation of 1.106, showing moderate variability and some differences in perceptions. ' Quick to Act on New Opportunities' has a mean of 3.94, suggesting organisations are generally proactive in seizing new opportunities ahead of competitors, with responses close to' agree' and a Std. Deviation of 1.139. ' Investment in Research and Development' shows a mean of 3.93, indicating respondents largely agree that their organisations invest significantly in R&D for innovation, with a Std. Deviation of 1.062. ' Engagement in Risky Projects' has a mean of 4.19, implying organisations are more inclined to engage in projects with uncertain outcomes but high potential returns, displaying a higher level of agreement than other indicators and a Std. Deviation of .980. These results highlight that the sampled organisations exhibit entrepreneurial

behaviours such as initiative, proactiveness, and innovation, with an emphasis on risk-taking for potentially high returns.

Table 2 *Technology infrastructure*

	N	Minimum	Maximum	Mean	Std. Dev
My organisation has access to modern and up-to-date technological tools and systems.	385	1	5	4.10	1.015
Employees in my organisation have the necessary hardware and software to perform tasks effectively.	385	1	5	4.05	1.010
My organisation effectively integrates technology into business processes to improve efficiency.	385	1	5	4.11	1.061
Technology adoption in my organisation fosters creativity and innovation among employees.	385	1	5	4.11	1.067
Valid N (listwise)	385				

Source: SPSS 27 output

This table summarises data on technology infrastructure based on responses from participants; access to modern technological tools and systems showed a mean (4.10), with respondents strongly agreeing that their organisations have access to up-to-date technological tools and systems with Std. Deviation (1.015). Also, the Availability of Necessary Hardware and Software with a mean (4.05) with Std. Deviation (1.010). Integration of Technology into Business Processes showed a mean (4.11) with respondents strongly agreeing that technology is effectively integrated into business processes to enhance efficiency with Std. Deviation (1.061). Technology's role in fostering creativity and innovation with a mean of (4.11) showing that respondents agree that technology adoption encourages creativity and innovation among employees with Std. Deviation (1.067). The results show that the sampled organisations prioritise modern technology infrastructure, emphasising integration, efficiency, and fostering creativity. These elements contribute significantly to operational effectiveness and innovation.

Table 3 *Human capital*

	N	Minimum	Maximum	Mean	Std. Dev
Regular training and development programs are offered to employees to enhance their skills and competencies.	385	1	5	4.06	.989
Employees are encouraged to share knowledge and expertise across teams and departments.	385	1	5	4.04	1.013
Our leadership team effectively motivates and empowers employees to achieve their best performance.	385	1	5	4.14	1.017
Employee engagement strategies in my organisation improve overall performance and Output.	385	1	5	4.11	1.008
Valid N (listwise)	385				

Source: SPSS 27 output

This table presents data on human capital based on responses from participants. Training and Development Programmes showed a Mean of 4.06, with respondents agreeing that regular training and development programmes are provided to enhance employee competencies, with a Std. Deviation of .989. Knowledge Sharing

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Across Teams showed a Mean of 4.04, with organisations encouraging knowledge-sharing among teams, and there was a general agreement among respondents with a Std. Deviation of 1.013. Leadership Motivation and Empowerment showed a Mean of 4.14, and respondents strongly agree that their leadership effectively motivates and empowers employees to achieve peak performance, with a Std. Deviation of 1.017. Employee Engagement Strategies showed a Mean of 4.11, indicating that organisations' employee engagement strategies are perceived to improve performance and output, with a Std. Deviation of 1.008. The findings emphasise the significant role of human capital strategies such as training, knowledge-sharing, leadership empowerment, and employee engagement in driving organisational performance. Leadership's effectiveness in motivating employees is a key strength in the surveyed organisations.

Table 4 *Performance of multinational organisations*

	N	Minimum	Maximum	Mean	Std. Dev
My organisation has maintained a competitive market position within Nigeria.	385	1	5	4.18	.930
Customer satisfaction levels in my organisation are consistently high.	385	1	5	4.17	.944
My organisation has effectively optimised resources to achieve operational efficiency.	385	1	5	4.24	.901
My Organisation consistently introduces innovative solutions to address market needs.	385	1	5	4.19	.942
Valid N (listwise)	385				

Source: SPSS 27 output

This table presents data on the performance of multinational organisations; the mean scores (all above 4.00) suggest that multinational organisations in Nigeria are performing strongly in key areas, including market competitiveness, customer satisfaction, operational efficiency, and innovation. The highest mean (4.24) for operational efficiency highlights the effectiveness of resource optimization as a critical driver of performance. The standard deviations (0.901–0.944) indicate relatively low variability, suggesting consistent practices and outcomes across the surveyed organisations. The results demonstrate that multinational organisations in Nigeria are achieving high performance, particularly in optimizing resources and introducing innovative solutions. Their competitive positioning and high customer satisfaction further underscore their success in addressing market demands effectively.

Test of Hypotheses

Table 5 *Model fitting information*

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	595.162	610.975	587.162			
Final	470.475	533.727	438.475	148.687	12	.000

Source: SPSS 27 output

The substantial reduction in AIC, BIC, and -2 Log Likelihood demonstrates that the final model fits the data much better than the intercept-only model. The likelihood ratio test confirms that the additional predictors or parameters in the final model significantly improve its explanatory power. The final model is statistically significant and provides a better fit to the data than the intercept-only model, as evidenced by the significant improvement in fit metrics and the likelihood ratio test. This suggests that the variables included in the final model make meaningful contributions to explaining the outcome of interest.

Table 6 *Goodness of fit*

	Chi-Square	df	Sig.
Pearson	506.964	256	.000
Deviance	352.437	256	.000

Source: SPSS 27 output

This table provides the Goodness-of-Fit statistics for a model, showing how well the model fits the observed data. The significant p-values for the Pearson and Deviance statistics indicate that the model does not provide a perfect fit to the data. A significant result may occur due to a large sample size, overdispersion, or other factors not captured by the model. While the significant p-values suggest deviations between observed and predicted values, further diagnostics (e.g., residual analysis) are necessary to assess the adequacy of the model. Adjustments to the model or the inclusion of additional predictors might improve its fit.

Table 7 *Pseudo R-square*

	R-squared value
Cox and Snell	.320
Nagelkerke	.354
McFadden	.163

Source: SPSS 27 output

This table presents the Pseudo R-squared statistics. The Pseudo R-squared values indicate that the model captures a meaningful proportion of the variability in the outcome but does not explain all the variation. Among the metrics, Nagelkerke's value is the highest, suggesting a relatively stronger explanatory power than the others. The model explains the variability in the dependent variable between 16.3% (McFadden) and 35.4% (Nagelkerke). While the explanatory power is moderate, it suggests the presence of other factors influencing the outcome that are not included in the model. Further refinement or inclusion of additional predictors could enhance the model's explanatory capacity.

Table 8 *Likelihood ratio tests*

Effect	Model Fitting Criteria		Likelihood Ratio Tests			
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	525.427	572.866	501.427	62.952	4	.000
Entrepreneurial orientation	477.413	524.852	453.413	14.938	4	.005
Technology infrastructure	470.764	518.203	446.764	8.289	4	.082
Human capital	519.259	566.698	495.259	56.784	4	.000

Source: SPSS 27 output

This table presents the Likelihood Ratio Test to evaluate the significance of individual predictors (effects) in the model by comparing the full model with reduced models where specific predictors are removed. Entrepreneurial orientation and human capital are significant predictors of the dependent variable, making meaningful contributions to the model's explanatory power. Technology infrastructure does not show statistical significance ($p > 0.05$), but it remains relevant in both practical and theoretical contexts. The intercept test confirms that the predictors collectively improve the model fit compared to the intercept-only model. The results indicate that entrepreneurial orientation and human capital are significant contributors to the model, highlighting their importance in explaining the outcome variable. This implies that entrepreneurial orientation and human capital alternate hypotheses are accepted and have a significant influence on performance. While technology infrastructure is not statistically significant and the null hypothesis is accepted, its role may warrant further investigation or refinement in future models.

5. Discussions

The study examined key factors affecting the performance of multinational organisations, focusing on entrepreneurial orientation, technology infrastructure, and human capital. The findings offer valuable insights into how these factors relate to organisational performance. The statistical analysis of performance reveals that entrepreneurial orientation has a clearly positive effect on multinational organisations, indicated by a p-value of 0.005. The study finds sufficient evidence to accept the hypothesis that entrepreneurial orientation produces positive effects on organisational performance. Performance results show higher value when organisations lead in developing new ventures, invest in research, and pursue high-risk opportunities. The research aligns with studies by Donbesuur et al. (2020) and Wahyuni and Sara (2020), which indicate that entrepreneurial orientation leads to positive performance outcomes across different business settings and industries. Additionally, Basco et al. (2020) confirm the widespread positive impact of entrepreneurial orientation on firm performance, regardless of specific firm characteristics. The findings are also in agreement with Ademola et al. (2024), who studied Nigerian firms and found a very strong positive correlation. Furthermore, Naisa et al. (2024) observed that multinational organisations practising entrepreneurial orientation grew more rapidly and had more engaged employees. The high scores from surveyed organisations demonstrate their entrepreneurial tendencies and support their proactive, innovative entrepreneurial character.

According to the likelihood ratio test for technology infrastructure, the established statistical cut-off ($p < 0.05$) was not exceeded, with a p-value of 0.082. The investigation does not support accepting the hypothesis regarding technology infrastructure's direct performance impact due to the statistical results. Organisations that possess modern technological tools, effective technology integration processes and technology-driven creativity tend to achieve performance improvements based on descriptive statistics. Although not statistically significant, the results suggest that organisations equipped with technology infrastructure have demonstrated improved creativity levels (4.11), which indicates a practical factor for performance enhancement. According to Hendrawan et al. (2024), technology operates indirectly to boost organisational competitiveness.

Human capital proved to be a highly significant predictor of organisational success, with a p-value of 0.000. The results confirm that human capital positively influences organisational performance. The descriptive research showed that respondents strongly agreed that training employees, combined with leadership empowerment and knowledge sharing, promotes successful organisational performance. The survey results indicate that human capital plays a vital role in performance enhancement, as demonstrated by high mean scores, such as leadership motivation reaching 4.14. These findings align with the studies of Joel and Oguanobi (2024); Omoyele and Olabisi (2020); Kurdi et al. (2020), which highlight the importance of business operations and strategic human resources. The research indicated statistical support for theories concerning entrepreneurial orientation and human capital, leading to their acceptance, while technological infrastructure did not receive statistical confirmation, resulting in rejection. The practical value of technology for organisational performance remains evident despite the lack of statistical support for the hypotheses.

The findings indicate that entrepreneurial orientation and human capital are significant drivers of organisational performance, while the role of technology infrastructure, though practically relevant, requires further investigation. The study highlights the interplay of internal resources in achieving superior performance, supporting the Resource-Based View (RBV) theory. By leveraging entrepreneurial practices and investing in human capital, organisations enhance competitiveness, innovation, and market adaptability.

Implications of the findings

The economic implications demonstrated that investing in human capital and encouraging entrepreneurial orientation will boost operational efficiency, customer satisfaction, and innovative solutions. This will improve organisational productivity and support the economic growth of host countries, particularly Nigeria. By focusing on entrepreneurial activities, organisations will help create knowledge-based economies. Innovation enhances organisational outcomes and drives sector-wide progress, elevating Nigeria's position in the global marketplace. Finally, effective utilisation of internal resources, such as technology and human capital, reduces dependence on external inputs. This fosters self-sufficiency and resilience amidst global economic challenges, especially for multinational subsidiaries operating in developing economies.

The practical implications suggest that multinational organisations should prioritise investments in human capital development through regular training, leadership empowerment, and knowledge-sharing practices. Such initiatives boost creativity and decision-making, directly affecting performance. Additionally, organisations should continue to modernise tools and systems and integrate them effectively into business processes to improve efficiency and encourage creativity. Employee engagement strategies that align with organisational objectives will lead to better outcomes, meaning that empowering employees and offering growth opportunities creates a motivated workforce capable of driving innovation and performance. Therefore, multinational organisations operating in Nigeria and similar contexts should adapt their resource management strategies to local challenges, such as limited access to advanced technology or skill gaps, to optimise resource utilisation.

The findings strengthen the RBV theory by demonstrating that internal resources—entrepreneurial orientation, human capital, and technology infrastructure—are essential drivers of superior organisational performance. This supports the view that firms gain a competitive advantage by leveraging unique, valuable, and inimitable resources. The study highlights human capital as a vital resource within the RBV framework, emphasising its role in fostering creativity, enhancing decision-making, and driving organisational outcomes. This deepens the RBV by emphasising the strategic importance of human resources in securing competitive advantages. The findings also imply that although technology infrastructure may not always be statistically significant, its integration within the RBV framework remains crucial for enhancing organisational processes and innovation. This encourages a broader perspective on how technology complements other resources to create sustained value. The study advances the theoretical understanding of RBV in emerging market contexts like Nigeria, where resource constraints and dynamic market conditions pose unique challenges. It demonstrates the flexibility of RBV across different economic environments. This study's economic, practical, and theoretical implications underscore the value of internal resources in achieving superior performance for multinational organisations. Guided by the RBV framework, the findings advocate for strategic investments in human capital, entrepreneurial practices, and technology to drive innovation, efficiency, and competitiveness, contributing to broader economic and theoretical advancements.

6. Conclusion

This study examined the impact of emerging technology entrepreneurship trends and the performance of multinational organisations in Nigeria, using the Resource-Based View (RBV) as its theoretical framework. The findings showed that entrepreneurial orientation and human capital are key drivers of organisational performance, with technology infrastructure playing a supporting yet vital role. By harnessing internal resources such as innovative practices, skilled employees, and technological tools, organisations can boost their competitive advantage, encourage innovation, and enhance operational efficiency. The study emphasises the importance of perceiving these resources not as isolated elements but as interconnected factors that drive sustained performance. The Resource-Based View (RBV), which suggests that organisations gain competitive advantage by developing and strategically managing valuable, rare, and inimitable resources, is supported by this research. Human capital, encompassing skills, knowledge, and competencies, is a core resource in promoting innovation and enabling superior decision-making, thereby improving organisational performance.

Additionally, entrepreneurial orientation, characterised by a proactive approach to risk-taking, innovation, and market opportunity, significantly contributes to the growth and competitiveness of the organisation. While not statistically significant in this study, technology infrastructure remains a critical enabler of innovation and operational effectiveness. Integrating technology into business processes improves efficiency, supports creativity, and allows organisations to stay competitive in an increasingly digital world. This suggests that technology, although a necessary resource, may require complementary factors—such as entrepreneurial practices and human capital—to unlock its full potential. The study also sheds light on the context-specific nature of resource utilisation. For multinational organisations operating in emerging markets such as Nigeria, adapting these resources to local economic conditions, challenges, and opportunities is crucial. This contextual adaptation will significantly enhance the relevance and impact of internal resources on organisational performance. Therefore, the findings emphasise the importance of a tailored approach in managing resources, particularly in markets that may present unique challenges such as limited access to advanced technologies or skill gaps.

Organisations should prioritise regular training, development programmes, and employee empowerment initiatives to enhance the competencies and engagement of their workforce. This will foster innovation, improve decision-making, and boost overall performance. Additionally, multinational organisations should cultivate a culture of entrepreneurship, encourage risk-taking, proactive decision-making, and pursue innovative solutions to stay competitive. Leadership should actively support projects with high potential returns and a focus on market needs. Moreover, organisations should continue modernising their technological infrastructure and integrating advanced tools into business processes. This will improve efficiency and foster creativity and innovation among employees, contributing to overall organisational success. Organisations should also implement strategies that actively involve employees in decision-making and the development of business processes. This will foster a sense of ownership and motivation, leading to enhanced organisational performance. Finally, multinational organisations operating in emerging markets like Nigeria should tailor their strategies to address local challenges, such as limited access to technology or skill shortages, to maximise the potential of their internal resources.

Future research could explore external factors like government policies, economic conditions, and market dynamics that influence the relationship between internal resources and organisational performance. Longitudinal studies might track the effects of entrepreneurial orientation, human capital, and technology infrastructure over time to evaluate their long-term impacts on performance. Additionally, future research could compare how these factors affect organisational performance across different industries or regions, offering a wider perspective on the applicability of RBV in various contexts. Considering the crucial role of technology in

modern organisations, further studies could investigate how emerging technologies such as AI, big data, and blockchain impact the effectiveness of organisational resources in enhancing performance.

Limitations of the Study

The study used a cross-sectional design, which gathers data at a single point in time. This restricts the ability to determine causality and the long-term effects of entrepreneurial orientation, human capital, and technology infrastructure on performance. The research concentrated on multinational organisations in Nigeria, and the results may not be applicable to organisations in other regions or industries. A more diverse sample would offer a broader understanding of the link between internal resources and organisational performance. The study examined a limited set of variables (entrepreneurial orientation, human capital, and technology infrastructure). Other elements, such as leadership style, organisational culture, and external market conditions, might influence organisational performance and should be explored in future research.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Abu, Z.;* ***data collection:*** *Ibrahim, K. M.;* ***analysis and interpretation of results:*** *Ibrahim, K. M.;* ***draft manuscript preparation:*** *Abu, Z.,* Oluwaseun, O.; ***reviewed the results and approved the final version of the manuscript****.*

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