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TECHNO-ENTREPRENEURSHIP, RELEVANCE OF TECHNO ENTREPRENEURSHIP, CHALLENGES OF TECHNOLOGY ENTREPRENEURSHIP

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Abstract: This article explores technopreneur' role in business, challenges, and opportunities. Technology has become essential to the success of almost any endeavour in modern times, affecting global human activity. The advent of these developments has allowed entrepreneurs and customers to improve business processes, grow businesses, and increase profit margins. However, entrepreneurs encounter challenges in adapting to the swift advancements in technology and adjusting their business models, which inhibits corporate performance and harms the economy. This article offers recommendations for technopreneur to prioritise the acquisition of technological knowledge, optimise the utilisation of available information, and focus on cultivating psychological capital to enhance their chances of success. And for policymakers and the government to streamline regulations, provide financial incentives to support research and development, and facilitate access to funding and resources for entrepreneurs at fair prices. Establishing a collaborative platform for entrepreneurs and government organisations to engage will foster innovative job opportunities and contribute to overall economic growth.

Keywords: Technology, entrepreneur, entrepreneurship, challenges

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Introduction

Over the past few decades, technology has significantly contributed to several countries' advancement (Paramati et al., 2022). As a result, the world economy has been reborn substantially, revolutionising human activity worldwide over the past 40 years (Selvarani & Venusamy, 2015). Its significance has emerged as a vital tool for entrepreneurs, facilitating their ability to grow their target market, optimise operational procedures, and maintain a competitive edge in the marketplace. From a business standpoint, the transition to increasingly automated business processes and communication based on, for example, electronic data transfer is intended to create higher efficiency and effectiveness in business processing deployed (Agrawal, 2019).

Countries worldwide have embraced information and communication technology (ICT) to improve public and commercial sector operations and give citizens more accessible access to these services (Onileowo & Fasiku, 2021). However, the focus on ICT has increased investments in research and development, Internet penetration, and literacy rates. According to Ndagi et al. (2019), technological advancements have presented both prospects and challenges for a nation's economic progress. It is vital to note that corporate processes become more efficient as technology advances.

According to Verma & Prakash (2021), today's global economy thrives on the wings of entrepreneurs applying technologies for effective business strategies due to fast-evolving technology, transforming the various facets of the world, especially the business world. It has reduced information-sharing processing time among business partners and made the business world a global village for ease of transactions, communications, business promotions, and knowledge garnering. Digital technology has transformed how individuals engage in commercial transactions and conduct business activities (Paramati et al., 2022). As a result, technology has become vital because of the need for entrepreneurial innovations to alleviate the ailing global economy. Moreover, it becomes essential for entrepreneurs to understand the role and the need to incorporate technology in their business operations, as this would enhance and boost their sales performance in the marketplace. According to Koe & Afiqah Sakir (2020), the world has embraced the era of 4.0, in which people have limitless access to online trading. The integration of technological components has facilitated the advancement and enhancement of economic activities within the domains of commerce and business enterprise. This suggests that technology is a promising avenue for future development, particularly in online business transactions, if embraced and given adequate support (Onileowo et al. 2021b). This article explores technology entrepreneurs' role in business, challenges, and opportunities and makes recommendations. Below is the article structure outlined: Techno-entrepreneurship and technology entrepreneurs will be discussed in the next section, followed by the Relevance of Techno-Entrepreneurship, the Challenges and opportunities that come next, and the managerial implications and recommendation and conclusion.

Techno-Entrepreneurship

Technopreneurship is a term that combines technology and entrepreneurship (Adiningrat & Warda, 2023). In organisations where creativity and innovation are on the rise, technopreneurship is on the rise. According to Pratiwi et al. (2022), the long-term sustainability of e-commerce and e-business is ensured by entrepreneurship and technopreneurship. Technopreneurs employ technology

in novel ways to give customers services or goods. Technopreneurs are business owners who integrate technological developments, develop new business processes and structures, and produce goods and services using technology (Ciobanu, 2017). The unprecedented global shift from an analogue to a remarkable digitalised world is without argument, as almost all activities are digitalised, especially business and entrepreneurial monitoring.

Technology entrepreneurs are essential in the corporate world. These individuals produce novel goods, services, and marketing strategies that radically transform existing markets and industries. According to Sun (2015), the word "entrepreneur" was first opined as a person involved in business commitments despite limitations in the certainty of robust results. The combination of technology and entrepreneurship has birthed a digital economy where businesses are monitored, signed, sealed, and transacted virtually. In addition to the digitalised method of prediction and resource management through digital information technology (Kordel & Wolniak, 2021). It is also a dual of entrepreneur and management functions (Chebo & Wubatie, 2021).

According to Kordel & Wolniak (2021), technological advancement depends on entrepreneurship. Technology entrepreneurship can create a regional economy (Paramati et al., 2022). It suggests the world's economic success will suffer without innovative, high-tech entrepreneurs who adopt technology to drive their businesses to maintain a global edge and create a niche for themselves (Ciobanu, 2017). It reflects in the disparity of the economic successes among countries of the world due to the exploration and adoption of technological entrepreneurship (Verma & Prakash, 2021).

According to Bailettiir (2012), technological entrepreneurship involves a system of leadership in business that revolves around recognition and intensive investment in human capital development, taking advantage of technological innovations in the industry, effective growth management, and handling risk. They are the process of maximising business opportunities through strategic resource gathering and technical deployment by an entrepreneur (Ndagi et al., 2019). A Technoentrepreneur or Digital entrepreneur is characterised by combining entrepreneurs, digitalised information technology, and formulating business strategies and ideas through technology (Subramaniam & Ismail, 2023; Zhai et al., 2023).

The significant impact of technology in entrepreneurship is what yields techno entrepreneurship, which is the creative novelty and transformation drawn from technical knowledge for the effective and efficient role of entrepreneurship, thus having the potential for enhancing the prosperity of a nation and its citizens (Kordel & Wolniak, 2021; Pugalia, 2022). It suggests that the advancement of technology holds a beneficial role in the commercial sector. The rapid development of technology can aid and improve business operations, yielding significant gains for technopreneurs.

Relevance of Techno-Entrepreneurship

The transformational drift from an orthodox business to a technical-based method has improved the entrepreneurial role, especially where innovative technology has been embraced and deployed (Agrawal, 2019). The Internet and mobile technology have contributed immensely to the

entrepreneurial technology shift. They have removed the ancient barriers that slowed down businesses globally.

According to Agrawal (2019), technology entrepreneurs offer outsourcing opportunities that organisations can leverage to cut costs and concentrate on their significant expertise to gain maximum profit with fewer production times. Also, due to the advent of technology, entrepreneurs now leverage unhindered access to information via the Internet (Selvarani & Venusamy, 2015). However, technology allows an entrepreneur to explore varying business models and concepts through diverse approaches (Verma & Prakash, 2021). The unprecedented transformation of entrepreneurial roles enhanced by digitalisation is not limited to business and the economy but also social life (Choi et al., 2021). It has translated to accessible business and ordering goods and services for consumers worldwide. In essence, technology has brought the market to our bedrooms as one can order any product from the comfort of his abode. It places business on a global scale for a more competitive role. Entrepreneurs who neglect technology's crucial role will be digging their business graves.

According to Verma & Prakash (2021), entrepreneurs are the most crucial component in any economy because they create employment and contribute to economic development. An entrepreneur must be innovative by doing the old things in a new way to achieve better and optimum results that improve the organisation's profit (Kuhnert, 2001). One of the critical roles of an entrepreneur is to bring innovations in their sphene to achieve back-to-back success. As the decision on the creation, adoption and application of emerging technologies in growing business lies with them, their openness to technological advancement opens opportunities for knowledge access needed for innovations. An entrepreneur must be apt to identify golden business opportunities in which technical applications are not to be left out. It shows how savvy an entrepreneur is. Every entrepreneur must understand their business environment locally and globally to maximise technological innovation. It will guide them in strategy formulation to be on a global advantage and not ignore the rapid transient changes that occur with the technology. It implies that entrepreneurs must be abreast of the latest technological trends to key into innovative entrepreneurial opportunities to boost their profit margin.

According to Verma & Prakash (2021), an entrepreneur's strategic use of information technology has contributed to value generation in Europe due to the crucial role of technology in economic growth. Major global business organisations have embraced and thrived on technological entrepreneurship (Eliakis et al., 2020). Most giant companies like Google (an online search engine), Amazon (an e-commerce company), and social media outlets (Facebook, WhatsApp), etc., have achieved remarkable success due to digitalised entrepreneurship (Teoh et al., 2022). Moreover, the increase in trade, finance, and quick problem-solving among countries is hinged on technological advancement. According to Chinyere & Yamma (2021), the efficiency boosting, subsidised cost of operation, improved consumer satisfaction, and output increase through real-time data process and information sharing have encouraged the use of technology in businesses, thus empowering entrepreneurs to get and monitor the growth of their business real-time anywhere in the world.

Moreover, in terms of production speed, applying technology in entrepreneurship speeds up the production rate, thereby reducing the product production cycle. Entrepreneurs who can't meet production time risk being out of the market if they disregard technological inputs and adoption for their production process. The possibility of the misconception by technology entrepreneurs assuming

that technology is responsible from start to finish of any business should not be overlooked. Therefore, it must be drummed that managerial and business skills in conjunction with technological applications yield desired results in any organisation. Although technology entrepreneur has offered numerous advantages, especially to big world-class companies, it is not the same story for small businesses as they face the challenge of meeting the pace of technology (Agrawal, 2019). Therefore, exploring models and modalities to make small enterprises tap into techno entrepreneurship without hassles is expedient. It will further boost the hope for the future global economy.

Challenges of Technology Entrepreneurship

Technology entrepreneurs play a crucial role in the business world. They are individuals who develop innovative products, services, and business models that disrupt traditional industries and create new markets. While they face many challenges, they also have numerous opportunities to impact the business world significantly. Techno-entrepreneurship undoubtedly offers rewarding profits; nevertheless, the risk involved is also not small (Verma & Prakash, 2021). It has brought advancement and some pockets of challenges, especially in the business world.

One of the challenges is the fear of rejection of a product or service by customers, which can affect sales due to low acceptance, thus discouraging digitalisation. It ultimately brews fear in the business world among entrepreneurs (Agrawal, 2019). Also, the unpredictability of the forces that influence the market is another crucial challenge to the entrepreneur due to variations in customers' choices and preferences due to their needs, wants, expectations, and locations. It results in hurdles towards satisfying all the divergent factors from the consumers, which can impair techno entrepreneurship. Moreover, the changing and unfavourable government policies and taxes affecting entrepreneurs can pose a challenge. The uncertainty of how their product sales and profit may be influenced is low, thus compounding the fears of digitalisation for entrepreneurs. Also, the poor orientation of the entrepreneur coupled with inexperience can contribute to the challenges of technology entrepreneurship, which can slow or result in making unprofitable digital market decisions. Technology entrepreneurs play a crucial role in the market economy. They are individuals who develop innovative products, services, and business models that disrupt traditional industries and create new markets. While they face many challenges, they also have numerous opportunities to impact the business world significantly.

Some of the challenges that technology entrepreneurs face includes funding, market competition, rapidly changing technology, and regulatory and legal barriers. Technology startups require significant capital to develop and bring their products to market, and obtaining financing can be challenging, particularly for early-stage companies that lack a proven track record. Established companies may have more resources and market power than new startups, making it difficult for technology entrepreneurs to gain traction and establish themselves in the market (Rathnayake & Roca, 2022). Technology is constantly evolving, and entrepreneurs must stay up-to-date with the latest trends and developments to remain competitive, requiring significant investment in research and development. Additionally, technology entrepreneurs may face regulatory and legal obstacles in introducing new products and services, which can be costly and time-consuming (Baloyi & Khanyile, 2022). Despite these challenges, technology entrepreneurs also have numerous opportunities to succeed in business, such as disrupting traditional industries, reaching a global audience, engaging in collaborative

innovation, and driving economic growth. Technology entrepreneurs play a vital role in the business economy despite numerous challenges. They can create disruptive products and services that change the world by identifying and capitalising on opportunities.

This section explores technology entrepreneurs' role in business, challenges, and opportunities. Technopreneurs are crucial environmental change agents, enhancing systems and creating novel strategies. It aids in information sharing and getting goods and services to almost anywhere in the world. It has broken business barriers and monitoring. Despite the challenges, technology entrepreneurship is worthwhile if properly utilised with adequate knowledge and expertise. Moreover, it can facilitate the advancement of technological entrepreneurship, mitigate social concerns, generate novel employment opportunities, promote technology transfer, foster innovation, and bolster national economic expansion.

Techno-entrepreneurship is a potent tool and force for entrepreneurs eager to transform their businesses into innovation-driven enterprises by leveraging the connections between technological competencies, innovative capacities, resources and attractive environmental factors, such as research and development, technological opportunities and rights to intellectual property. The fact that it offers a strategy to direct the use of techno-entrepreneurship practices for firms and insights into how those interrelated components contribute to the sustainable performance of businesses has profound consequences for policymakers and company owners.

Managerial Implications and Recommendation

An urgent requirement exists for establishing enterprise-oriented technology transfer units to facilitate the connection between production and science and technology systems. Therefore, small business enterprises in the country must undergo frequent retooling and reengineering processes as it becomes essential for development organisations to establish and execute a practical approach to enhance the links between the national innovation system and startups. Based on the preceding, this section recommends the creation of an ecosystem that will boost individuals' passion and furnish them with a supportive network during their transition into technopreneurs. Additionally, it advocates for the government, research organisations, and academic institutions to spearhead the creation of legal, financial, and institutional structures for enterprises to support the commercialisation of research findings, knowledge transfer and technology exchange between research institutions and organisations. Similarly, it recommends that the government enact policies supporting technology acquisition at affordable prices for entrepreneurs. To ease business operations and improve sales and performance.

Managerial implications for small business enterprises should create an ecosystem that supports individuals transitioning into technopreneurs. Additionally, legal, financial, and institutional structures should be established to support the commercialization of research findings, knowledge transfer, and technology exchange between research institutions and organisations. Also, government should implement policies that help entrepreneurs acquire technology at affordable prices and as well emphasis training programmes that focus on scientific research, innovation, technology, internet usage, and local content creation. These underscore the importance of a joint effort between the government

and private sector to foster the expansion of small enterprises and enhance the overall economic systems.

Finally, to foster the growth of techno-entrepreneurship, policymakers and governmental bodies must establish and execute policies and initiatives conducive to its development. It includes implementing training programs focusing on scientific research, innovation, technology, internet usage, and local content creation. It can be maintained through a collaborative effort between the government and private sector to drive the growth of small enterprises and the overall economic systems.

Conclusion

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Conflict of interest

The authors declare that there are no conflicts of interest related to the publication of this article.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Ethics Declaration

This study relied exclusively on publicly available secondary data and involved no direct interaction with human participants. Therefore, formal ethical approval was not required.

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