

ENTREPRENEURSHIP IN EMERGING MARKETS AND THE 4TH INDUSTRIAL REVOLUTION: OPPORTUNITIES AND CHALLENGES

Abstract

This chapter focuses on the ever-changing visage of entrepreneurship in emerging markets, specifically within the framework of the 4th Industrial Revolution. The chapter covers the unexplored market potential and specific demands within many sectors, including agriculture, healthcare, education, and the economy. Entrepreneurs operating inside emerging economies have a unique opportunity to effectively respond to pressing needs, thereby generating a favourable influence on both individuals' well-being and global progress. This chapter provides valuable insights into the evolving entrepreneurial landscape and outlines the necessary measures to promote sustainable growth and development.

Keywords: Entrepreneurship, 4th Industrial Revolution, Emerging Markets, Opportunities, Challenges.

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I. INTRODUCTION

Individuals all around the world have access to unprecedented chances for starting businesses thanks to the Fourth Industrial Revolution, which is defined by the convergence of digital technology (Maynard, 2015). There is a great opportunity for economic growth, job creation, and social progress as a result of this shift in emerging markets. When it comes to leveraging the potential of the Fourth Industrial Revolution (IR 4), however, entrepreneurs in emerging markets confront distinctive opportunities and challenges. Through an analysis of the dynamic interplay between technical developments and the entrepreneurial environment, this chapter tries to shed light on the transformational ability of entrepreneurship in emerging markets.

The Fourth Industrial Revolution is notable in that it made technology more accessible to more people. Individuals in the most remote regions may now access the global digital environment because of the widespread availability of mobile devices, the internet, and computers. Thanks to improvements in communication infrastructure, entrepreneurs today have an unprecedented opportunity to participate in e-commerce, get access to information resources, and expand their operations to global markets (Wanzu et al., 2019).

Innovative business models that challenge established markets have emerged as a result of the digital revolution (Teece, 2017). Access to healthcare, education, financial services, and electricity are just some of the issues that entrepreneurs in emerging markets may tackle with the help of technological breakthroughs. For instance, mobile money platforms have revolutionized monetary exchanges by making banking accessible to unbanked populace (Mpofu, 2022). In a similar vein, telemedicine and e-learning platforms have helped people in underdeveloped areas gain access to healthcare and education (Franklin et al., 2021).

But there are special obstacles that entrepreneurs in emerging markets must overcome before they can fully benefit from the Fourth Industrial Revolution. A lack of dependable infrastructure, such as enough power and internet connections, may hinder the acceptance and scalability of digital solutions. Creative solutions, such as off-grid renewable energy systems and decentralized network infrastructure, are needed for entrepreneurs to successfully overcome these obstacles (Zafar & Ben Slama, 2022). It is also important to eliminate barriers to digital education and training for all people so that entrepreneurs may gain the knowledge and skills they need to make the most of new technology.

Realizing IR 4's revolutionary potential in emerging markets is critically dependent on the state of the entrepreneurial climate (Iqbal & Rahim, 2021). Supportive policies, innovation ecosystems, and access to funding and technical support are all areas in which governments, in partnership with private sector companies and international organizations, play a critical role (Beliaeva et al., 2019). Aspiring entrepreneurs can greatly benefit from the guidance and training offered by entrepreneurship support groups, incubators, and accelerators, which can provide them with the knowledge, tools, and linkages they need to succeed in the modern digital economy.

Fostering a culture of innovation and information exchange requires collaborations between entrepreneurs, academics, and industry (Garzoni et al., 2020). Entrepreneurs in

emerging markets may benefit from R&D resources, industry knowledge, and the development of human capital by forming strategic alliances with these entities. Untapped markets and local needs (Agarwal et al., 2020); mobile technology and digital solutions (Msweli & Mawela, 2020); leapfrogging legacy infrastructure (Sambuli & Bawa, 2023); skills development (Prokopenco et al., 2020); empowering youth (Fattah et al., 2021); policy and regulatory environments (Urbano et al., 2020); digital inclusion (Manda & Ben Dhaou, 2019); and overcoming the digital divide (Bilozubenko et al., 2022) are all key areas that present opportunities and challenges in the development of the emerging markets entrepreneurship ecosystem.

II. UNTAPPED MARKETS AND LOCAL NEEDS:

There are many undiscovered market prospects in many sectors due to size and diversity. Entrepreneurs in emerging markets are in a prime position to meet urgent demands in sectors as diverse as agriculture, healthcare, education, and the economy (Ayoo, 2022). Successful entrepreneurs may make a positive difference in people's lives and the world at large by anticipating and meeting these demands.

For example, Africa has a long history of agriculture and access to enormous amounts of fertile land. The gaps in productivity, access to modern farming practices, and value chain growth remain (Amelework et al., 2021). Entrepreneurs may grab this opportunity by bringing novel solutions, including sustainable irrigation systems, enhanced post-harvest storage and processing processes, and precision agricultural technology. By resolving these issues, entrepreneurs may boost agricultural output and food security while simultaneously expanding the economy via the creation of new jobs (Willer & Aldridge, 2020).

Similar issues are present in healthcare systems of emerging markets, which is suffering from a lack of both basic resources and medical experts (Tortorella et al., 2020). Entrepreneurs may play a vital role in solving these problems by creating ground-breaking medical advances. Mobile health apps can provide health information, appointment scheduling, and prescription reminders, while telemedicine platforms can link people in remote places with healthcare practitioners (Al-Shorbaji & Al-Shorbaji, 2021). Entrepreneurs in the healthcare industry may use technology to expand patient pools, boost the quality of medical service delivery, and boost population health.

III. MOBILE TECHNOLOGY AND DIGITAL SOLUTIONS

Rapid mobile technology adoption is a remarkable feat that has had far-reaching effects on the business climate. Businesses have a fantastic opportunity to benefit from the growing mobile phone penetration and help fuel the economic development in emerging markets. Because of the accessibility and affordability of mobile devices, new solutions to issues that were previously unthinkable are now within reach (Jameaba, 2020).

The advent of mobile banking in Africa is a prime illustration of the game-changing impact of mobile technology. Access to traditional financial services has historically been a problem for many people, especially those living in rural or otherwise remote areas. Mobile banking services, however, have opened the door to the financial system for millions of Africans (Alam et al., 2019). Mobile banking, money transfers, payments, and loans are now

all possible thanks to the efforts of enterprising individuals who have created platforms accessible via a user's mobile device (Panagariya, 2022). All of these and more are made possible for users by these platforms. This has resulted in a change in the way people manage their finances and conduct transactions by providing access to formal financial services to previously unbanked populations (Chen et al., 2021).

In addition, e-commerce platforms and digital marketplaces have grown substantially across emerging markets (Chauhan et al., 2022). These mediums have helped reduce the distance between buyers and sellers by facilitating the acquisition of a wider variety of products and services by buyers. By making use of mobile technology, enterprising people have created online marketplaces where anything can be purchased or sold quickly and easily. These markets provide a mobile alternative to conventional stores, therefore overcoming their inherent disadvantages (Aziz & Bhatti, 2023). Because of this, not only do businesses have more opportunities at their disposal, but consumers also have more choices and more convenience in life.

In addition to more traditional types of e-commerce, mobile technology has been a major factor in the rise of innovative business models, including mobile-based informal marketplaces (Sharma et al., 2023). By linking them with potential buyers, these platforms help small businesses and informal merchants reach a wider audience for their products and services. Using mobile phones, entrepreneurs may tap into the burgeoning informal economy, allowing previously underserved people to take part in economic activities and generate income for themselves (Lorato et al., 2023).

Furthermore, mobile technology has enabled entrepreneurs to create solutions that are both all-encompassing and tailored to the requirements of previously underserved populations (Sadare et al., 2022). Mobile agriculture platforms, for instance, provide farmers with crucial data on weather, market prices, and best practices (Bhat & Huang, 2021). As a result, farmers are better equipped to make informed decisions and improve their farming practices, which boosts crop yields and profits. Similarly, mobile health applications have been developed to expand access to high-quality medical treatment in underserved areas. Using these programs, people in remote places can have access to healthcare resources and data.

There are still challenges, despite the vast promise of mobile technology. The lack of internet connection, especially in rural areas, is a major obstacle preventing emerging markets from realizing the full potential of mobile technology (Lambrechts & Saurabh, 2019). To ensure that everyone can take advantage of technological developments, it is crucial to invest in new infrastructure and maintain efforts to improve internet connections. Concerns related to the growth of digital literacy and other skills must also be addressed to ensure that individuals can effectively use mobile technology to pursue entrepreneurial aspirations (James, 2020).

The proliferation of mobile technology in emerging markets has drastically altered the economic landscape, giving entrepreneurs new opportunities to break into hitherto uncharted markets. There are now more people who can have access to banking services because of the proliferation of mobile banking, e-commerce platforms, and digital marketplaces. The large percentage of the population that does not have a bank account presents a significant opportunity for entrepreneurs to leverage mobile technology to develop inclusive solutions

that address the special requirements of disadvantaged populations. By embracing mobile technology and finding solutions to the issues now facing emerging markets, entrepreneurs may continue to foster economic growth, empower communities, and inspire sustainable development.

IV. LEAPFROGGING LEGACY INFRASTRUCTURE

Entrepreneurs in emerging markets have difficulties due to inadequate conventional infrastructure, but they also have the chance to immediately incorporate contemporary technology (Amankwah-Amoah et al., 2021). This trend enables entrepreneurs to go beyond cumbersome analog methods and into the realm of digital solutions, which foster creativity, productivity, and long-term success.

Artificial intelligence (AI) is one of the most promising technologies that startup founders may use to their advantage (Fileri et al., 2021). Artificial intelligence (AI) has the potential to significantly impact several industries. For instance, AI-driven medical diagnostics can help alleviate the lack of medical personnel by delivering reliable health evaluations in a timely fashion (Javaid et al., 2022). Even in locations with a dearth of medical facilities, entrepreneurs may create AI-driven healthcare solutions that employ telemedicine and data analytics to improve remote patient monitoring, individual treatment plans, and overall health (Patil & Shankar, 2023).

Entrepreneurs may add block chain technology to their arsenal of effective tools. Financing, supply chain management, and property rights are just a few examples of industries where blockchain's decentralized and transparent nature might help fix trust and security problems (Zheng et al., 2022; Terzel et al., 2021). Secure digital payment methods, streamlined supply chain procedures, and verified property ownership records are all possible thanks to block chain technologies used by business owners. This is especially helpful in areas where building confidence and holding people accountable is difficult since it increases efficiency, decreases fraud, and increases openness (Agarwal et al., 2022).

The Internet of Things (IoT) is another promising technology with enormous promise in emerging markets. IoT is a network of physical objects and systems that gather and analyze data and are automated by their connections to the web (Perwej et al., 2019). Entrepreneurs may use the Internet of Things to boost efficiency, productivity, and service quality (Ahmad & Zhang, 2021). In farming, for instance, IoT sensors can track things like soil moisture, temperature, and humidity so that farmers can make informed decisions about things like irrigation, fertilizing, and pest control management. This has the potential to boost agricultural yields while also reducing farming costs and promoting long-term sustainability (Rehman et al., 2022).

In addition, industries like energy and education can benefit from the introduction of digital solutions and connectivity. Entrepreneurs can offer off-grid electricity solutions in locations with limited access to traditional energy infrastructure by using renewable energy technologies like solar power (Moran et al., 2022; Zebra et al., 2021). This promotes economic growth, improves access to healthcare and education, and boosts people's quality of life. Access to quality learning materials and instructional opportunities, especially in

geographically dispersed communities, is another challenge that digital education platforms and e-learning technologies can address (Ananga, 2020; Olanrewaju et al, 2021).

Although adopting digital solutions is advantageous in many ways, obstacles, including a lack of internet connection, equipment, and digital literacy, must be overcome (Neumeyer et al., 2020). To ensure that businesses and communities are able to fully use new technologies, efforts should be made to enhance infrastructure, boost internet access, and provide training programs in collaboration with government agencies, private sector groups, and international partners.

Entrepreneurs in emerging markets face a unique set of obstacles and possibilities due to outdated infrastructure (Ahlstrom et al., 2020). Innovative, efficient, and inclusive development is possible thanks to the use of digital technologies like AI, blockchain, and the Internet of Things by business owners (Malik et al., 2022). Entrepreneurs in fields as diverse as healthcare, banking, agriculture, and education are finding new ways to innovate thanks to the capabilities made possible by these technologies. Entrepreneurs can improve the lives of millions by helping to build more sustainable economies through the use of digital technology (Tohānean et al, 2020).

V. YOUTH EMPOWERMENT SKILLS DEVELOPMENT

A youthful population is a huge benefit to businesses owing to their boundless enthusiasm, original thinking, and openness to new ideas. Unfortunately, there is an urgent need for comprehensive skill development and training programs to properly unleash this potential and harness the entrepreneurial spirit that abounds in these youth.

Education in entrepreneurship is an important part of equipping young people in emerging markets with the tools they need to start businesses. By offering entrepreneurship training in schools, they will be provided with the tools they need to succeed in the workplace. Young people may greatly benefit from learning the ins and outs of company management if entrepreneurship is incorporated into the school curriculum (Anjum et al., 2021). Aspiring entrepreneurs might benefit from courses that address areas like market research, financial management, marketing techniques, and business planning.

Vocational training, alongside traditional education, is crucial in preparing young people for the challenges of starting their own businesses (Hameed & Irfan, 2019). Providing individuals with industry- or trade-specific vocational training programs can provide them with the technical competence necessary to succeed in today's economy. Young entrepreneurs may gain the specific skills necessary to succeed in the digital era through training in areas like coding, digital marketing, renewable energy technology, and e-commerce (Jardim, 2021).

Aspiring entrepreneurs need access to education and vocational training, but they also need mentorship programs to help them succeed. By bringing together seasoned businesspeople and promising up-and-comers, both groups benefit from the sharing of insights, advice, and ideas. Business planning, networking, and securing capital are all areas where mentors may provide invaluable insight and assistance (Rukmana et al., 2023). Young

entrepreneurs can greatly benefit from mentorship programs because they can help them avoid typical traps, speed up their learning curve, and boost their confidence.

A new generation of pioneering businesspeople can be fostered by providing them with opportunities to learn new skills, get mentoring, and participate in vocational and business education (Rukmana et al., 2023). These youthful entrepreneurs are the engine that will power sustainable growth and development. They have the potential to provide novel goods, services, and business models that solve regional problems and generate economic growth. In addition, these entrepreneurs may access international markets and have an international effect by embracing the digital age and utilizing technology (Amankwah-Amoah, 2019).

Providing youths with education, training, and resources will allow them to realize their full entrepreneurial potential. In turn, this will promote an environment conducive to entrepreneurship, leading to increased productivity, more employment opportunities, and a more progressive society (Rashid, 2019).

VI. ACCESS TO CAPITAL AND ALTERNATIVE FINANCING:

Traditional forms of funding sometimes fall short of the demands of budding entrepreneurs in emerging markets. As a result of this imbalance, it is critical to foster the expansion of entrepreneurship through the creation of alternative funding methods (Chae et al., 2020).

Venture capital is an alternative source of funding. In exchange for a share of ownership or equity, venture capital firms invest in high-growth, early-stage companies (Aker & Alam, 2020). These companies actively seek enterprises with strong development potential and are prepared to take measured risks in pursuit of potentially lucrative profits. The number of venture capital firms have grown in recent years, and more money is being put into the startup scene (Mauthe et al., 2022). These investments not only offer much-needed funds, but also a wealth of knowledge, guidance, and connections that may help businesses get off the ground.

Angel investors are another option for startups to secure investment. Angel investors are wealthy people who back new businesses in exchange for stock or convertible debt (Cornelius, 2020). In addition to financial resources, these investors frequently contribute specialized expertise, contacts, and an understanding of the market. Angel investors fill a significant void in the startup funding ecosystem by giving entrepreneurs the initial cash they need to transform their ideas into successful enterprises (Adhana, 2020).

Crowd funding is another option that has recently become available to entrepreneurs in emerging markets in need of financial backing (Demiray & Burnaz, 2019). Through crowd funding, businesses may gain access to capital from a sizable pool of people who are confident in their ideas and goods. This form of funding allows entrepreneurs to solicit monetary contributions from a large group of people who are interested in their ideas, goods, or social projects (Bernadino & Santos, 2020). Crowd funding is useful for startups because it can help them raise money and spread the word about their business, which may improve their chances of success.

Additionally, impact investment funds have grown in popularity as a new type of non-traditional funding. Impact investors seek out companies that improve society or the environment while still providing a financial return (Holtslag et al., 2021). These funds actively seek out startups in industries like healthcare, education, renewable energy, and sustainable agriculture. Funds dedicated to impact investing provide patient money with a focus on long-term returns and community improvement. Impact investors, who prioritize both financial return and social good, may help forward-thinking entrepreneurs (Thirion et al., 2022).

Collaborations between investors, incubators, and entrepreneurs are essential to efficiently filling the financing gap. Mentoring, access to networks, and business development tools are just some of the many ways in which incubators and accelerators help businesses succeed. These groups frequently form alliances with investors, allowing them to serve as intermediaries between startups and possible backers. By easing the way for these partnerships to form, company owners will have easier access to more sources of capital and more tools at their disposal.

VII. POLICY AND REGULATORY ENVIRONMENT

If a country or area wants to foster the growth of entrepreneurship and release its entrepreneurial potential, it must first create an enabling environment for it. Governments play a critical role in this context by creating rules and regulations that encourage and enable business startups and growth (Costa, 2021).

Reducing red tape and simplifying paperwork are two essential elements of an enabling environment. Red tape and lengthy processes might discourage would-be entrepreneurs from taking the plunge (World Bank Group, 2019). Governments may make it simpler for entrepreneurs to comply with regulations by streamlining and speeding up procedures like business registration, licensing, and tax compliance. More people will be inspired to try their hand at entrepreneurship if obstacles to entry are removed and the cost of starting a company is lowered (OECD, 2020).

Facilitating the creation of new businesses is another crucial step in encouraging entrepreneurship. Reforms that governments may adopt to improve the business climate include better contract enforcement, clearer rules, and more dependable infrastructure (Nguimeku & Okou, 2019). Governments may do a lot to help the economy by making it easier for businesses to operate inside their borders and in others. It is also important to ensure that entrepreneurs have reliable access to utilities like energy, transportation, and communication (Orobia et al., 2020).

The promotion of innovation and entrepreneurship relies heavily on the security of intellectual property rights (IPRs). Governments can establish and enforce strict IPRs rules and regulations to safeguard the legal rights of businesses and innovators (Cui et al., 2022). Trade secrets, patents, and trademarks are all included in this category. When governments take steps to safeguard intellectual property, they provide entrepreneurs with the assurance and motivation they need to engage in R&D and innovation. As a result, investments in knowledge-intensive businesses increase, along with levels of creativity and technical innovation (Gifford & McKelvey, 2019).

It is essential to develop an entrepreneurial environment by enacting regulations that encourage innovation and setting up entrepreneurship hubs. Governments may support R&D by providing financial incentives in the form of tax breaks, grants, and subsidies (Long & Liao, 2021). Entrepreneurs will have better access to resources, guidance, and contacts if these hubs and incubators are established. Knowledge transfer, the monetization of research, and the development of innovative new businesses are all aided by public-private partnerships that bring together experts from different sectors to work together (Gupta et al., 2019).

It is essential for governments, businesses, and international organizations to work together to foster an atmosphere that encourages entrepreneurship. Talking to people in the private sector can help governments learn about their problems and suggestions. Governments may guarantee that rules and policies are adapted to fit the unique needs of the entrepreneurial community if they include entrepreneurs and industry leaders in the policymaking process. Governments may execute successful entrepreneurial development initiatives with the help of international organizations that can provide technical assistance, information sharing, and financial support.

VIII. OVERCOMING THE DIGITAL DIVIDE AND EXPANDING DIGITAL ACCESS FOR ALL

Despite the growing reliance on technology, ensuring that everyone has access to it is still a major issue. Inequalities in internet access are a barrier to digital inclusion, particularly in rural areas and underserved communities. It is critical to close these gaps and guarantee that everyone can reap the benefits of the information age. Promoting digital inclusion and giving voice to marginalized populations are two major outcomes of initiatives aimed at closing the digital gap (Robinson et al., 2020).

Digital inclusion relies heavily on the availability of low-cost internet connections. Many people and communities in emerging markets struggle because internet access and infrastructure development may be expensive (Bala & Tan, 2021). Governments, telecom firms, and international organizations can work together to expand access to high-speed internet and lower prices in order to increase digital inclusion. Subsidized Internet services, community networks, and investments in infrastructure are all ways to provide the Internet to underserved areas. More individuals will be able to join the network, use the internet, and participate in the digital economy if prices and availability improve.

Programs teaching digital literacy are essential because they provide people with the tools they need to succeed in today's information-driven society. The ability to effectively use digital technology and engage in the digital economy may be beyond the reach of many individuals, especially those living in underdeveloped regions. Basic computer skills, internet navigation, online safety, and digital entrepreneurship may all be taught through digital literacy training programs, which can be implemented by educational institutions, organizations, and government agencies. Individuals' self-esteem, employability, and access to possibilities in the digital domain are all boosted when they are equipped with digital literacy abilities (Hussain, 2023).

Making digital material that is specific to a region is also crucial for expanding access to technology. Online material may be inaccessible to minority groups due to language and cultural limitations. Those with an entrepreneurial spirit may make a big difference by creating and sharing regionally and/or culturally relevant material. This can include platforms that give information about local markets, agricultural practices, healthcare, and other issues in the native language(s) of the target audience(s). Entrepreneurs may bridge the divide and encourage participation among varied populations by making digital material accessible to all and adapted to local circumstances (Mehra et al., 2020).

In addition, entrepreneurs may help with digital inclusion by creating new approaches to the problems experienced by disadvantaged areas. Making technology like cheap cell phones and solar-powered gadgets that allow for connectivity in places with limited infrastructure is one way to achieve this goal. Additionally, entrepreneurs in low-resource areas may create platforms and applications that facilitate vital services like e-commerce, financial transactions, healthcare consultations, and access to educational materials (Božić, 2023). Entrepreneurs may promote digital inclusion and give voice to underserved groups by crafting solutions that are accessible, relevant, and inclusive.

The full potential of entrepreneurs in the digital era cannot be realized without addressing the digital divide and fostering digital inclusion. Key elements of this approach include the provision of low-cost internet connections, the promotion of digital literacy, and the promotion of locally produced content. Entrepreneurs are in a prime position to promote digital inclusion by creating new products and services that answer the needs of neglected populations. Entrepreneurs may advance digital inclusion, generate social impact, and lead the way for more equitable participation in the digital economy by advocating for equal access, digital literacy, and inclusive technology.

In conclusion, the Fourth Industrial Revolution's proliferation of interconnected digital technology offers unrivaled possibilities for entrepreneurial development in emerging markets. Entrepreneurs may use digital solutions to meet unmet demands and fuel economic growth, job creation, and social progress. However, it also presents difficulties that must be met if entrepreneurs are to realize this promise. This involves addressing issues like closing the digital divide, expanding access to the internet, and improving lagging infrastructure. To enable individuals and communities to engage in the digital economy, initiatives such as inexpensive internet access, digital literacy programs, and the production of localized content are essential.

Skills development and empowerment of the youth are essential components in fostering a vibrant entrepreneurial ecosystem. Entrepreneurship education, vocational training, and mentorship programs equip aspiring entrepreneurs with the knowledge and capabilities needed to thrive in the digital age. By investing in the youth, a new generation of innovative entrepreneurs who will drive sustainable economic growth can be nurtured.

The policy and regulatory environment also play a critical role in creating an enabling environment for entrepreneurship. Governments need to reduce bureaucracy, improve the ease of doing business, protect intellectual property rights, and promote innovation through supportive policies. Collaboration between governments, private sector entities, and

international organizations is crucial in formulating policies supporting entrepreneurship and fostering collaboration between academia, industry, and entrepreneurs.

Access to capital remains a significant challenge for entrepreneurs in emerging markets, necessitating the development of alternative financing mechanisms. Venture capital, angel investors, crowd funding platforms, and impact investment funds offer viable alternatives to traditional funding. Collaborations between investors, incubators, and entrepreneurs are essential to bridge the funding gap and provide the necessary resources for entrepreneurial ventures.

In summary, by embracing the transformative capacity of the Fourth Industrial Revolution, emerging markets can unlock its entrepreneurial potential and create a thriving ecosystem that drives economic growth, job creation, and social development. By addressing the challenges and embracing the opportunities, emerging markets can themselves become a hub of innovation, entrepreneurship, and sustainable development on the global stage.

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