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Digital Transformation and Its Impact on Entrepreneurial Development in Emerging Economies

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Abstract: Digital transformation has proved to be an efficient driver of entrepreneurship in emerging markets; however, the dynamics between the two phenomena have not been thoroughly investigated yet. To bridge this gap, we systematize the results of literature reviews and empirical research conducted in various emerging economies to understand how digital transformation influences entrepreneurial ecosystems, firm capabilities, and economic performance. Specifically, digital transformation helps overcome informational gaps, creates favorable conditions for market entry, and allows firms to adopt innovation in their business models. Notably, mobile banking technology alone stimulates entrepreneurial activity among 8-13% of families in some developing countries. Nevertheless, the dynamic nature of the process is evident in the fact that although 5.4 million new users of digital services have been connected in West Africa, only 7% of MSMEs in India consider implementing artificial intelligence solutions. Based on our analysis, digital infrastructure, institutional structures, and knowledge application capabilities act as critical moderating factors in terms of turning digital transformation into entrepreneurship.

Key Word: Digital Transformation, Entrepreneurial Development, Emerging Economies, Digital Entrepreneurship, MSMEs, Innovation Ecosystems

I. INTRODUCTION

The explosion of digital technology in the Global South has revolutionized entrepreneurship in emerging markets. Whether it is mobile money in East Africa or cloud computing platforms in Southeast Asia, digital technology is changing the way entrepreneurs discover opportunities, gather resources, serve customers, and grow their businesses. Unlike earlier innovations that often failed to reach developing nations, digital innovation holds out the prospect of leapfrogging—that is, entrepreneurs in resource-starved settings may be able to level the playing field against their competitors in the advanced world [3].

This evolution is crucial for several reasons. First, micro, small, and medium-sized enterprises (MSMEs) form the foundation of emerging economies. They contribute nearly 30% to gross domestic product in countries such as India, where MSMEs employ over 110 million people in sectors ranging from manufacturing and services to trade [1]. Traditionally, MSMEs were disadvantaged in several ways. They lacked easy access to formal finance, did not enjoy market connections, and suffered from information asymmetry favoring incumbents. Fortunately, digital innovation can help overcome these obstacles.

Nevertheless, there is no deterministic and straightforward link between digital transformation and entrepreneurship. Recent studies show a growing discrepancy between digital readiness and scaling capability in 170 nations. Even though digital infrastructure and connectivity have seen significant growth globally, there are still many differences among nations in terms of their capabilities to leverage those foundations for entrepreneurial purposes [2].

In this regard, this paper aims to answer three questions. First, how does digital transformation affect entrepreneurial development in terms of ecosystems, firms, and individuals in emerging markets? Second, what moderates the effects of digitalization on entrepreneurial success? Third, what should be done from a policy and management point of view to enhance the impact of digital transformation on entrepreneurship?

The significance of the current paper is threefold. First, by integrating different sources of information, such as systematic literature reviews, empirical research findings, and policy implementations' analysis, we attempt to assess the overall effect of digital transformation on entrepreneurship development in emerging economies. Second, we outline several moderators which influence the efficiency of the process, including digital transformation inputs, institutional environment, and capability of entrepreneurs to exploit digital opportunities. Finally, we suggest an integrated framework of the relationships between digital transformation inputs and entrepreneurial outputs.

II. LITERATURE SURVEY

There has been considerable academic research published on cryptocurrency investments since 2021, as its validity as an asset class increases. Borri, Liu, Tsyvinski, and Wu (2026) offer the most thorough empirical research thus far, dividing cryptocurrency market patterns into seven stylized facts. These researchers have shown that the risk-adjusted returns on cryptocurrency markets are similar to those of the markets of traditional investments, which can be described by a limited number of factors. It is essential to emphasize that blockchain data, especially on-chain user adoption, affects cryptocurrency prices, differentiating them from traditional securities. The research sample of 16,468 distinct cryptocurrencies between 2013 and 2025 indicates the "maturation" of cryptocurrencies as an asset class for investments."

Literature on digital transformation and entrepreneurial development in emerging economies has grown significantly from 2021, covering various disciplines and research methodologies. In this part, I discuss the latest insights from three key themes: ecosystem dynamics, organizational capability, and individual-level outcomes.

Ecosystem Dynamics

In a systematic literature review of entrepreneurial ecosystems in emerging economies, Nurani, Wardi, and Rino (2025) found that digitalization is a catalytic mechanism for integrating weaknesses in institutions, enhancing communication, and fostering cross-sector collaborations. From their review of the latest empirical literature, they concluded that innovation (specifically green and digital innovations) is the key driver of value creation and entrepreneurial competition. Institutions, however, remain central for governance despite continued challenges such as bureaucracy and fragmented policies [4].

According to the Global Digital Entrepreneurship Ecosystem Index (2026), which has tracked 170 countries between 2017 and 2022, the disparity between digital readiness and scaling capabilities is quantified. High-income countries like the US, Denmark, and UK have led global rankings because their ecosystems feature institutions that promote balanced ecosystem growth. However, other emerging economies like those in Sub-Saharan Africa and Central Asia have seen the highest relative growth in terms of digital skills. The most critical finding in the report is that scaling entrepreneurship is currently the major structural impediment to the development of the global digital economy [5].

A perfect example of an ecosystem level intervention is the Western Africa Regional Digital Integration Program (WARDIP), which is part of the programs implemented by the World Bank. The second phase of WARDIP, which was approved in March 2026, and which received funding of $137 million, seeks to link around 5.2 million people to new or upgraded broadband internet facilities in Benin, Liberia, and Sierra Leone; provide digital services to more than 5.4 million users and facilitate the growth of over 140 digital companies [6].

Firm-Level Capabilities and Constraints

There has been much heterogeneity found concerning the adoption and benefits associated with digital transformation within MSMEs operating in emerging markets. One such study examined 274 MSEs from Ghana and established that there is a negative link between learning from business failure experience and digitalization, contradicting studies that have shown that entrepreneurial failures may lead to better outcomes for firms. However, this link was found to be positively moderated by knowledge exploitation capability, which refers to the capacity to discover, assimilate, and utilize knowledge to enhance organizational performance. This implies that managers who have experienced entrepreneurial failure in the past should emphasize knowledge capabilities for digital transformation success [7].

A multiple case study analysis of 35 MSEs located in southern Brazil has highlighted 40 variables that act as inhibitors or enablers for digital transformation using sociotechnical systems (STS) theory [8]. It was established that MSEs showing advancements on multiple STS fronts such as technical, social, organizational, and environmental aspects are better placed to attain sustained digital transformation.

Constraints to the growth and development of MSMEs in developing economies are numerous. According to a 2025 survey by PayNearby, only 7% of India’s MSMEs have considered the use of artificial intelligence-driven technologies, while 36% have reported opposition to the adoption of new technology and 18% have faced problems due to high costs involved in implementing them . Moreover, rural-based MSMEs face several challenges: only 16-20% of them receive loans from institutions, and 70% of the Indian workforce has not received any formal training [9].

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Individual-Level Entrepreneurial Mindset

However, the entrepreneurial mind-set has been shown to act as a vital mediator in digital transformations. According to the systematic literature review conducted by Zainuddin et al. (2025), entrepreneurs who are adaptable, curious, resilient, and have opportunities in sight can make better use of digital technologies and adjust better to technological changes. Digital capabilities such as the adoption of AI, data analytics, cloud services, and other digital technologies help in business model innovations, but barriers, such as poor digital literacy, lack of resourcefulness, weak infrastructure, and reluctance to technology, remain relevant for many SMEs and entrepreneurs in developing countries [10].

According to the UNCTAD report on the impact of AI on entrepreneurship in developing countries, artificial intelligence technologies cannot be considered "plug-and-play." The value of AI technologies in enterprises does not depend on their decision to implement AI but on the level of enterprises' digital capabilities, skills, and business processes alignment. As long as there is no sufficient amount of data or computing power or business processes integration, AI technologies may turn out to be inefficient or even unused.

Institutional and Policy Dimensions

Institutional settings have been shown to be important factors in determining how digital transformation contributes to entrepreneurial development. The need for predictability and certainty in regulatory frameworks, which decrease the need for risky experiments, cost-sharing, subsidies, and pilot projects, which decrease costs associated with initiating such programs, and governance arrangements that increase trust, experimentation, and innovation must be met.

Comparative study suggests that good governance practices entail the use of voluntary codes, transition systems, and regulatory sandboxes, which ensure that both innovation promotion and risk management are balanced. It should be emphasized that AI risk management should not be left entirely to MSMEs; the burden is shared by developers and deployers, with the former primarily responsible for systemic biases and model risk due to technical control.

III. METHODOLOGY:

The research method employed in this study is a mixed methods approach, where a systematic literature review will be followed by a quantitative synthesis of existing empirical evidence. Methodology for this research involves four stages: development of the theoretical framework, systematic review, quantitative analysis, and case studies synthesis.

3.1 Development of Conceptual Framework

The conceptual framework used in this research takes into consideration three theoretical approaches that provide an explanation of the interdependence between digital transformation and entrepreneurship development in emerging markets.

Firstly, the ecosystem approach, based on the theory of the entrepreneurial ecosystem, views digital transformation as an exogenous driver shaping opportunities and constraints for entrepreneurs. Digital capabilities are intertwined with institutions and markets to form the context in which entrepreneurship can flourish.

Secondly, the capability-based approach based on the knowledge-based theory of the firm postulates that digital technologies are valuable for entrepreneurs when accompanied by organizational capabilities of acquiring, exploiting, and integrating knowledge. Digital transformation leads to heterogeneity in the results obtained by different firms despite similar levels of technology adoption owing to different organizational knowledge exploitation capabilities.

Third, the sociotechnical systems perspective takes into consideration that digital transformation involves changes from both technological and socio-cultural angles that have to be addressed in totality. This is the reason why technological investments alone cannot achieve the desired entrepreneurial results.

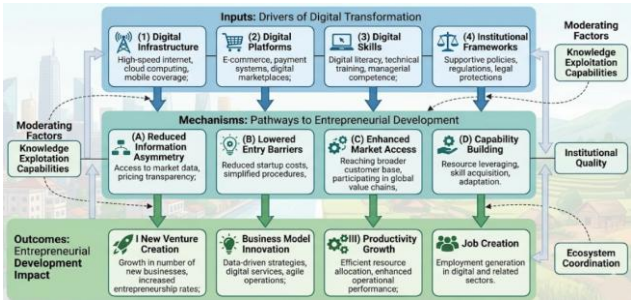

Figure 1: Conceptual Framework Linking Digital Transformation to Entrepreneurial Development.

3.2 Systematic Literature Review Protocol

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A systematic literature review has been conducted according to PRISMA guidelines. The search strategy involved the use of Scopus, Web of Science, and Google Scholar databases with the aid of search strings including "digital transformation" OR "digitalization" OR "digital entrepreneurship" AND "emerging economies" OR "developing countries" OR "Global South" AND "entrepreneurship" OR "SMEs" OR "MSMEs" OR "startups."

The inclusion criteria comprised: (1) peer-reviewed journal articles or highly rated reports published from 2021 to 2026; (2) relevance to digital transformation and entrepreneurship; (3) emphasis on emerging economy settings; (4) availability in English language. The search process led to identifying 847 items. Following the removal of duplicates (n = 312), 535 titles and abstracts were reviewed. As a result, 423 items were excluded based on their lack of conformity to inclusion criteria. Eventually, 112 papers were selected for full-text analysis and inclusion (n = 68).

The data collection process consisted in extracting the following: characteristics of research, findings, identified barriers/facilitators, implications for practice.

3.3 Quantitative Synthesis Approach

In regard to quantitatively synthesizing the findings, we identified effect sizes and statistics reported in studies that had explored the relationship between variables related to digital transformation and entrepreneurial performance. Since the results were heterogeneous in terms of outcome variables and methodological approaches used, we resorted to narrative synthesis augmented by voting.

Variables synthesized were:
Access to digital infrastructure (access to broadband, mobile money, and platforms)
Digital competency (digital literacy, artificial intelligence adoption, e-commerce)
Entrepreneurial performance (venture development, business innovation, job creation, productivity)

3.4 Case Study Selection and Analysis

Four case studies were chosen to demonstrate the various ways through which digital transformation can affect entrepreneurship:

1. India – Digital transformation of MSMEs using artificial intelligence and the urban-rural digital divide
2. West Africa (Benin, Liberia, Sierra Leone) – Regional digital integration initiative
3. Brazil – Socio-technical factors affecting the digital transformation of MSEs
4. Ghana – Knowledge exploitation capabilities and digitalization

Selection of cases was purposeful.

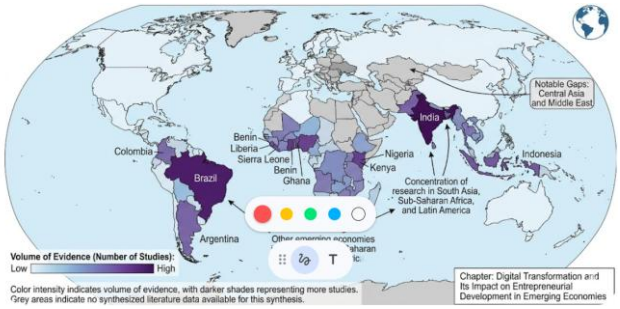

Figure 2: Geographic Distribution of Evidence Base.

IV. RESULT ANALYSIS AND DISCUSSION

In this part, the results of the empirical synthesis, comparison between different cases, and moderation variables are provided.

4.1 The Effects of Digital Transformation on Entrepreneurial Success

The findings obtained through synthesizing literature show mostly positive, yet highly heterogeneous effects of digital transformation on entrepreneurial success. The summary of the findings is presented in Table 1 below.

Table 1: Comparative Analysis of Digital Transformation Impact on Entrepreneurship Across Studies

Study/Context	Digital Intervention	Entrepreneurial Outcome	Effect Size	Key Moderators
Nurani et al. (2025) - Multi-country SLR	Digital ecosystem development	Innovation capacity, competitiveness	Positive (direction consistent)	Institutional quality, policy coordination
Issah et al. (2025) - Ghana (n=274 MSEs)	Business digitalization	Technology adoption	Negative direct effect (β negative, p<0.05)	Knowledge exploitation capabilities (positiv

				e moderation)
Balsalobre-Lorente et al. (2025) - 7 emerging economies	Information technology adoption	Business start-ups	+0.005% (entrepreneurship coefficient)	Income, FDI, financial inclusion
World Bank (2026) - West Africa	Broadband expansion, digital skills	Digital startup creation	140+ startups supported	Ecosystem coordination, financing access
PayNearby (2025) - India	AI tool adoption	MSME technology use	7% adoption rate	Cost (18% barrier), resistance (36% barrier)

The research by Balsalobre-Lorente, Abbas, and Shah (2025) focused on seven emerging economies within the period 2005-2021, and found out that information technology plays a significant role in contributing towards the success of business start-ups. The entrepreneurial effect was positive and contributed significantly to new business through its positive significant effect by 0.005%, whereas, income, foreign direct investment, and financial inclusion were all positive significant effects too. Significantly, the study also analyzed the mediating effect of information technology in these associations to find out significant indirect effects – suggesting the importance of information technology in increasing the entrepreneurial effect of other variables.

On the contrary, the research study conducted in Ghana by Issah, Iddrisu, and Iddrisu (2025) indicates a more complex phenomenon. The negative direct relationship between the learning of business failure experiences and digitalization is counterintuitive since it implies that previous experience of failures may discourage digitalization efforts. This negative relationship may be explained by a high degree of caution after failures or insufficient resources for digital investments. Importantly, the knowledge exploitation capability positively moderated the relationship under consideration.

4.2 Infrastructure and Access Gaps

Infrastructure continues to be an essential limitation as well as facilitator. The WARDIP2 program by the World Bank, which connects 5.2 million people to broadband Internet while allowing 5.4 million new users of digital services in three West African countries, exemplifies the extent of required investments and possible gains. The support to over 140+ digital startups in that program, some led by women, shows how growth of infrastructure can lead to entrepreneurship if accompanied by financial resources and access to markets.

However, serious limitations still remain. In India, despite various country-level efforts in the digital economy sphere, less than one-fifth of rural MSMEs have access to institutional loans, and more than three-quarters of the labor force lack formal vocational training . Moreover, rural and urban digital divides are evident as Niti Aayog and industry estimates point out low rates of digitization among small businesses operating in rural areas compared to their urban counterparts.

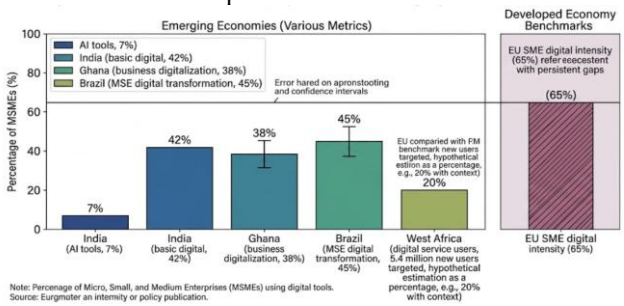

Figure 3: Digital Adoption Rates Across MSMEs in Selected Emerging Economies.

4.3 Capability as the Critical Moderator

The most persistent pattern is the effect of moderating capabilities. The study on sociotechnical systems among Brazilian MSEs revealed 40 factors involved in digital transformation processes, whereby improvements along several dimensions – technical, social, organizational, and environmental – predicted sustainable transformation. This multidimensional requirement explains why relying on technology is not sufficient.

In the UNCTAD report, the effectiveness of AI depends on digital infrastructure, skills, and business processes . If there are no sufficient data and computing capacity, along with properly aligned processes, the use of AI technology

may prove inefficient. This finding calls for reconsideration of assumptions about technology availability leading to entrepreneurial success.

The capabilities for exploiting knowledge found among Ghanaian enterprises offers specific mechanisms, whereby those who are able to generate and exploit knowledge through internalization manage to reap the benefits of digitalization despite previous failure attempts.

4.4 Institutional and Ecosystem Factors

The VIGS Digital Entrepreneurship Ecosystem Index shows that whereas digital skills have become more developed around the world, entrepreneurial scaling continues to be the main constraint. Economies of high income benefit from well-balanced ecosystems where good institutions, deep capital markets, and mature digital platforms work together. Economies that show fastest improvements in digital capabilities among emerging ones, however, struggle to capitalize on their advantages and scale their businesses.

This ecosystem approach is already embedded in the concept of WARDIP, which is comprised of three key components that are supposed to work together to promote scaling. Regulatory harmonization across the countries participating in the West African Economic and Monetary Union in WARDIP is supposed to help to overcome institutional fragmentation.

The MSME cluster strategy designed by India in collaboration with UNIDO is based on the premise that it will be competitiveness, rather than financial aid, that will determine the future of the MSME sector. AI-enabled clusters and quality infrastructure are part of this initiative.

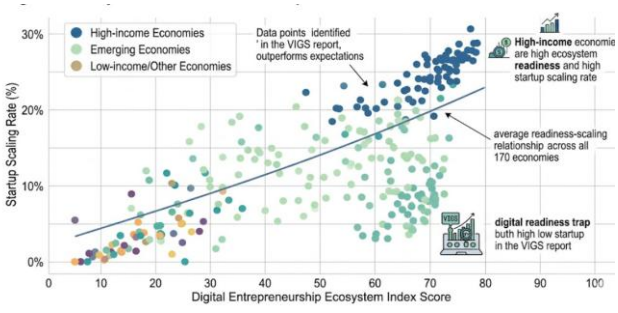

Figure 4: Ecosystem Readiness and Entrepreneurial Outcomes Across Economies.

4.5 Policy and Intervention Effectiveness

The comparative analysis of policies and interventions has highlighted some interesting observations. To start with, holistic ecosystem strategies that address different barriers concurrently have been found to be more effective than single-dimension policies. This is well exemplified by the WARDIP program, which made a $137 million investment in infrastructure, regulation, and entrepreneurship.

The second observation is related to the effectiveness of supporting capacity building. From the fact that knowledge exploitation capabilities mediate the impact of failure experience on digitalization, it can be inferred that training in knowledge management and integration can yield high dividends .

Third, the need for balanced governance approaches that promote innovation and minimize risk has been highlighted. According to the UNCTAD report, one-size-fits-all regulation will always put small enterprises at a disadvantage; therefore, regulatory sandboxes and other options such as voluntary guidelines and transitional measures should be considered.

Fourth, rural development requires specific attention in the context of digital policies. The stress on rural inclusiveness by the Indian MSME Minister indicates that there is a need for initiatives that cater specifically to rural entrepreneurs.

V. CONCLUSION

In this paper, the effects of digital transformation on the growth of entrepreneurship in emerging economies have been analyzed based on systematic reviews of literature, empirical studies, and policy assessments in various settings. The results highlight a nuanced effect, marked by notable opportunities, considerable diversity, and important moderators.

It has been established that digital transformation contributes to the development of entrepreneurship; however, its size and nature are conditioned by the existence of necessary competencies, institutions, and ecosystems. In particular, digitalization mitigates informational asymmetries, decreases transaction costs, and promotes innovative business models, allowing even mobile money applications to unlock entrepreneurship for many individuals without bank accounts. However, the fact that only 7% of MSMEs in India are using AI technologies and 36% are experiencing difficulties with adopting innovations suggests that the opportunities are still underutilized.

Three important elements have been found by the moderation analysis that determine whether digitalization results in entrepreneurial success. The first one is knowledge exploitation capacity, which is the capacity to discover, assimilate, and apply new knowledge. Knowledge exploitation capacity was found to be a very consistent predictor of successful digitalization. From this perspective, there are some practical recommendations for intervention design. Programmes aimed at building up capabilities may prove more effective than programmes aimed at subsidizing technology. The second element is institutional quality, which refers to regulatory and policy coordination mechanisms. Institutional quality determines whether entrepreneurs will be able to explore digital technologies with manageable risks.

Accordingly, the comparative analysis proves that multi-dimensional interventions outperform single-dimension interventions. The ecosystem-based WARDIP approach by the World Bank is a good example of such an intervention with integrated infrastructure, regulation, and entrepreneur support. Without a holistic effort, the use of technology alone would lead to the emergence of the "digital readiness trap"—the development of connectivity while failing to facilitate the scaling of entrepreneurs' operations.

There are several limitations to this study that need to be addressed. First of all, the available research is largely regional—mostly focusing on South Asia, Sub-Saharan Africa, and Latin America—and sectoral—mostly focusing on MSMEs and digital services. Secondly, the abundance of cross-sectional studies precludes drawing a causal link between digital transformation and entrepreneurial activity; longitudinal research is needed to understand this dynamic better. Finally, the fast-paced nature of technological innovation, particularly in the sphere of AI, means that some results may not generalize.

Several areas require immediate focus in future studies. First, longitudinal studies focusing on the effects of digital transformation on entrepreneurship results are extremely necessary to determine causality and dynamics. Second, studies that would investigate the specific pathways via which exploitation capabilities enable digital transformation, including process-oriented research and experiments, can be useful in guiding capability-building efforts. Third, comparative studies exploring the effectiveness of various governance regimes, including sandbox regulation, voluntary standards, and transitional solutions for MSMEs, can contribute significantly to evidence-based policy design. Finally, research on the effect of digital transformation on the entrepreneurship of the informal economy—prevalent in most emerging economies—is woefully lacking.

The implications of this study are far-reaching in practice. For policy makers, the results provide justification for ecosystem-based interventions which consider infrastructure, institutions, and capabilities concurrently, rather than just technology investments. For MSME owners and managers, the results underscore the need for capability building in particular knowledge exploitation and digital literacy as preconditions for achieving digital transformation. Development partners can take note from these results that resources must be allocated towards programs which integrate infrastructure, skill development, and institutional reforms, especially for rural areas and female entrepreneurs.

Digital transformation presents much potential for entrepreneurial growth in developing countries, but achieving the full extent of its potential demands strategic intervention. It does not happen automatically, nor will it work the same way in all cases. Digital transformation and entrepreneurship are intricately linked to building complementary capabilities, institutional support systems, and coordinated efforts at an ecosystem level. As advances in artificial intelligence and other emerging technologies continue to progress, there is still an opportunity to influence the role digital transformation will play in fostering entrepreneurship.

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