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OVERVIEW OF THE ENTREPRENEURIAL ECOSYSTEM IN SOUTH AFRICA: A LITERATURE REVIEW[1]

PANORAMA DO ECOSSISTEMA EMPREENDEDOR DA ÁFRICA DO SUL: UMA REVISÃO DE LITERATURA

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ABSTRACT

This article presents an overview of the development of South Africa's entrepreneurial ecosystem. To this end, a systematic literature review was conducted with database searches, which highlighted challenges and opportunities. Highlights include social inequality, bureaucracy, and difficulties in accessing credit; the strategic role of universities and technology hubs in the development of human capital and innovation; regional experiences, such as the ecosystems of Johannesburg, Nelson Mandela Bay, and Mpumalanga; and the influence of the BRICS as a block supporting the transformation of the entrepreneurial environment. The research demonstrates that, despite advances in public policies and the creation of support platforms, the South African ecosystem lacks coordinated actions, territorial integration, and institutional strengthening to achieve inclusive and sustainable development.

Keywords: South Africa, entrepreneurial ecosystem, BRICS, small and medium-Sized enterprises, economic development.

RESUMO

Este artigo apresenta um panorama do desenvolvimento do ecossistema empreendedor da África do Sul. Para isso, foi realizada uma revisão sistemática de literatura com busca em bases de dados, que apontou desafios e oportunidades. Destacam-se a desigualdade social, burocracia, dificuldades de acesso ao crédito; o papel estratégico das universidades e hubs tecnológicos no

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desenvolvimento do capital humano e da inovação; as experiências regionais, como os ecossistemas de Joanesburgo, Baía de Nelson Mandela e Mpumalanga; e a influência do BRICS como bloco de apoio à transformação do ambiente empreendedor. A pesquisa demonstra que, apesar dos avanços em políticas públicas e na criação de plataformas de apoio, o ecossistema sul-africano carece de ações coordenadas, integração territorial e fortalecimento institucional para alcançar um desenvolvimento inclusivo e sustentável.

Palavras-chave: África do Sul; ecossistema empreendedor; BRICS; pequenas e médias empresas, desenvolvimento econômico.

INTRODUCTION

South Africa is a country marked by the diversity of sociolinguistic groups, such as the Xhosa, Zulu, Sotho, Swazi, Venda, and “white” populations mainly descended from the English, Dutch, and Asians (Agostinho, 2018). Due to this vast diversity, the country has been shaped by domination, adaptation, and withdrawal among human groups, while still facing challenges related to social inequality, the consolidation of its democratic government and institutions, which reflect on the difficulties in maintaining a high level of economic development. Pereira (2011) states that the transition from the Apartheid regime - a legacy of Dutch and British colonization between the 17th and 20th centuries - to democracy was complex and far from peaceful. In the 1990s, despite having the most developed economy on the African continent, the country was plagued by high unemployment, poverty, violence, and income concentration.

South Africa joined BRICS in 2010, alongside Brazil, Russia, India, and China. This entry was strategic, considering its role as Africa’s most developed economy and a gateway to the continent. Membership allowed for greater integration within a bloc that collectively represents 35% of global GDP, fostering increased collaboration, and economic and cultural exchanges among the member nations. As Rani and Kumar (2021) demonstrate, the group offers business investment opportunities to help member economies transition from an efficiency-driven phase to an innovation-driven one.

Even though integration into BRICS provides financing opportunities and the exchange of best practices, entrepreneurial activity rates in the group’s countries, including South Africa, have remained stable over the years. Nevertheless, government initiatives and support for innovation have been emphasized as tools to foster inclusive growth.

Currently, South Africa’s economy is concentrated in large urban areas, in cities that host prominent universities such as Johannesburg, Pretoria, and

Cape Town. These locations not only concentrate wealth and population but also play a crucial role in developing the entrepreneurial ecosystem (EE). Universities significantly contribute to research and the development of technologies and initiatives that support entrepreneurship, acting as meeting points for entrepreneurs, investors, and other stakeholders (Høvig et al., 2023).

Thus, initiatives such as support for Small and Medium Enterprises (SMEs) through the Small Enterprise Finance Agency (SEFA) and programs like Unlocking Potential in an Enterprising Nation have sought to create a more favorable environment for entrepreneurship. The government has also invested in public-private partnerships to promote innovation and the development of technology hubs linked to universities, such as the Entrepreneurial Development in Higher Education (EDHE) platform, which aims to foster academic intrapreneurship. Despite these efforts, the impacts remain limited due to a lack of coordination and policy continuity.

South Africa is also one of the few African countries included in the Global Entrepreneurship Monitor (GEM) surveys. In the 2022 report, the other featured African nations were Egypt, Morocco, Togo, and Tunisia, while for 2023 only South Africa and Morocco remained, with both classified economically at Level C by the consortium, corresponding to nations with a per capita GDP of less than $25,000 (GEM, 2023; 2024).

In the most recent GEM report (2025), the country remains at Level C. Furthermore, the consortium noted that continued economic growth below 1.5% per year and the decline of national infrastructure have contributed negatively to new business development. However, there has been an increase in women’s participation in entrepreneurial activities: from 9.5% in 2022 to 13.5% in 2023 (Bowmaker-Falconer; Meyer; Samsami, 2024).

In recent years, South Africa’s Total Early-Stage Entrepreneurial Activity (TEA) rate has fluctuated greatly: from 17.5% in 2021, it dropped to 8.5% in 2022

and rose again to 11.1% in 2023. Men are more likely to start businesses than women (male TEA = 12.7%; female TEA = 9.7%). The Established Business Ownership rate rose significantly, reaching 5.9%, a marked increase from the previous year. Additionally, seven out of ten new entrepreneurs cited their motivation for entrepreneurship as earning a living due to scarce jobs, while a slightly lower number (two out of three) agreed that building significant wealth or a very high income was also a motivator (GEM, 2023).

Given the GEM (2025) report's statement that the quality of South Africa's entrepreneurial ecosystem is rated as poor by national researchers - and earlier publications highlighting the nation's slow development - there arose the question of evaluating the conditions of the EE in the country. Therefore, this article aims to present an overview of the challenges and opportunities related to the development of South Africa's entrepreneurial ecosystem.

For this purpose, a systematic literature review was conducted to gather scholars' perspectives on the topic, aligning the most relevant and discussed points to assist other researchers in future studies, which in turn may offer a deeper understanding of entrepreneurial ecosystem dynamics in South Africa alongside data provided by reports such as GEM.

As the country has recently become a focus of studies involving entrepreneurial ecosystems (EE), especially concerning the role of Small and Medium Enterprises (SMEs), it is evident that South Africa's EE is under development but faces significant challenges. Bureaucracy, lack of resources, and government support hinder the progress of intrapreneurship, especially within universities.

Furthermore, only 10.3% of the adult population is engaged in entrepreneurial activity, and issues such as access to financing, development of entrepreneurial skills, and technology absorption still pose significant obstacles to the growth and sustainability of SMEs in the country. In addition, with the

economy underperforming for over a decade, GDP has been declining since 2011, and extreme social inequality, the country still has a long way to go to develop entrepreneurship as a key driver of economic development, job creation, and social cohesion (Bowmaker-Falconer; Meyer; Samsami, 2022).

The COVID-19 pandemic has exacerbated the challenges faced by SMEs in South Africa, highlighting the need for government support measures and resilience initiatives. During lockdown periods, many businesses faced financial and operational difficulties, underscoring the importance of access to financing and business support for survival during crises (Fubah; Moos, 2022).

Nevertheless, adaptive strategies such as diversifying business models and adopting online services were essential for the survival of some entrepreneurs, and networking played a crucial role, enabling companies to share information and collaborate in facing challenges together. The pandemic underscored the need to create a more resilient ecosystem, with a focus on innovation and flexibility (Fubah; Moos, 2022).

To organize the findings of this study, the article was divided into three main sections, in addition to this introduction: methodological procedures that explain the preparation of the systematic literature review, perspectives on the entrepreneurial ecosystem in South Africa with four thematic subsections, and the final considerations.

METHODOLOGICAL PROCEDURES

This article employed a systematic literature review to outline a panorama of studies addressing entrepreneurial ecosystems within South Africa, helping to understand scholars' different perspectives on the conditions, challenges, needs, and main actors that compose the country's entrepreneurial ecosystem. Thus, the compilation of studies here demonstrates the difficulty researchers face in accessing data and references exclusively about countries considered

marginalized, developing, and outside the centralized European axis. This highlights the importance of conducting more analyses on African countries, sparking interest in further investigations that bring diversity to the international research landscape.

Regarding the procedures, the search began with four databases recognized by the scientific community: Web of Science, Scopus, Scielo, and CAPES journals. To identify recent publications addressing advances, challenges, and characteristics of South Africa's EE, inclusion parameters were set for scientific articles published between 2018 and 2025, open access, in English and Portuguese. The following keywords were used: "entrepreneurial ecosystem", "entrepreneurial ecosystems", "ecossistema empreendedor" or "ecossistemas empreendedores", and "South Africa" or "África do Sul". Additionally, only peer-reviewed scientific articles were included, excluding theses, dissertations, conference proceedings, books, and book chapters.

The distribution of results by database was as follows: 53 articles found in Web of Science, 44 in Scopus, 37 in CAPES journals, and one in Scielo, totaling 135 articles in the first search. The screening of results considered titles, abstracts, and later the full content of texts to ensure thematic relevance. After removing duplicates and carefully reading the texts, 18 articles were selected for qualitative analysis and thematic categorization. These procedures allowed for the analysis of texts commonly addressing structuring within the macro entrepreneurial ecosystem of South Africa.

A search was also conducted in CAPES journals for articles published between 2018 and 2025 with the specific keywords "South Africa" and "BRICS", to determine if any correlation between studies on the bloc (which includes the country) and entrepreneurial ecosystems existed. Thirty open-access articles were found. The studies focused on medicine, psychology, engineering, research and development, economics, education, politics, and environment. Among the

studies, the article by Bates (2021), which mentions the term entrepreneurial ecosystem and did not appear in the previous search, was found. The author provides a comparative analysis of the entrepreneurial ecosystems of BRICS countries and will be further explored at the end of the next section.

Chart 1 was created to synthesize the results found for the systematic literature review and includes the authors, article title, publication year, methodology adopted for the study, and main theme, all linked to the perspectives observed during text analysis to group and synthesize the most common and/or addressed topics in the articles.

Methodologically, regarding the studies gathered, it was noted that most authors prefer qualitative approaches. This includes bibliographical research and literature reviews (Wadee & Padayachee, 2018; Sambo, 2018; Swartz, Marks & Scheepers, 2020; Iwu et al., 2024), as well as comprehensive qualitative studies, such as Fubah and Moos (2022). There are also exploratory qualitative studies (Trethewey-Mould & Moos, 2024; Lee & Kim, 2025) and case studies, which provide more robust results and allow for comparisons with secondary data like those from GEM and GEI, as in Atiase, Kolade & Liedong (2020); Boucher, Cullen & Calitz (2023); Ogujiuba, Eggink & Olamide (2023); Msimango-Galawe & Majaja (2022); Høvig et al. (2023); Boucher, Cullen & Calitz (2024); and Ismail et al. (2024).

Chart 1 – Overview of scientific articles used for the literature review

Authors	Title	Year	Methodology	Main Theme
Atiase; Kolade; Liedong	The emergence and strategy of tech hubs in Africa: Implications for knowledge production and value creation	2020	Case study	Role of universities and tech hubs
Bate	A comparative analysis on the entrepreneurial ecosystem of BRICS club countries: practical emphasis on South Africa	2021	Mixed (qualitative and quantitative)	References to BRICS
Boucher Cullen Calitz	Culture, entrepreneurial intention and entrepreneurial ecosystems: evidence from Nelson Mandela Bay, South Africa	2023	Case study	Examples within the macro South African entrepreneurial ecosystem
Boucher Cullen Calitz	The role of urban planning for Nelson Mandela Bay's entrepreneurial ecosystem	2024	Case study	Examples within the macro South African entrepreneurial ecosystem
Dzimba Van Der Poll	Disruptive innovation at the base-of-the-pyramid: Negotiating the missing links	2022	Case study	Examples within the macro South African entrepreneurial ecosystem
Fubah Moos	Exploring COVID-19 challenges and coping mechanisms for SMEs in the South African entrepreneurial ecosystem	2022	Comprehensive qualitative study	Structural challenges and needs
Høvig et al.	The role of investors in developing academic spin-offs: The biotech sector in South Africa	2023	Case study	Role of universities and tech hubs
Ismail et al.	Student entrepreneurship support at South African public universities: an ecosystem perspective	2024	Case study	Role of universities and tech hubs
Iwu et al.	Sustaining Family Businesses through Business Incubation: An Africa-Focused Review	2024	Systematic literature review	Role of universities and technology hubs
Lee Kim	Analyzing determinants' priorities of entrepreneurial ecosystems for ICT start-ups in Sub-Saharan Africa: a path toward sustainable development	2025	Exploratory qualitative study	Challenges and structural needs

Chart 1 – Overview of scientific articles used for the literature review - continuação

Authors	Title	Year	Methodology	Main Theme
Msimango-Galawe Majaja	Mapping the needs and challenges of SMEs: A focus on the city of Johannesburg entrepreneurship ecosystem	2022	Case study	Examples within the South African macro entrepreneurial ecosystem
Ogujiuba Eggink Ebenezer	Interaction and main effects of finance support and other business support services on the entrepreneurial ecosystem: a case study of the Mpumalanga Province, South Africa	2023	Case study	Examples within the South African macro entrepreneurial ecosystem
Rani Kumar	Do entrepreneurial activities decrease income inequality and boost human development? Evidence from BRICS economies	2021	Meta-analysis	Challenges and structural needs / Mentions of BRICS
Rani Kumar	The dynamics of link between entrepreneurship, government support and economic growth: Evidence from BRICS countries	2022	Meta-analysis	Mentions of BRICS
Sambo	A conceptual study of an intrapreneurship ecosystem at South African universities	2018	Systematic literature review	Role of universities and technology hubs
Swartz Marks Scheepers	Venture Support Organizations – lighting a path for entrepreneurship in South Africa?	2020	Literature review	Challenges and structural needs
Trethewey-Mould Moos	A stakeholder approach towards a consolidated framework for measuring business incubator efficacy	2024	Exploratory qualitative study	Role of universities and technology hubs
Wadee Padayachee	Higher education: catalysts for the development of an entrepreneurial ecosystem, or … are we the weakest link?	2018	Bibliographical research	Challenges and structural needs

Source: own authorship.

In particular, some of the articles analyzed used mixed approaches (qualitative and quantitative). The two articles by Rani and Kumar (2021; 2022) present a systematic review of studies using GEI data, but to combine this data, meta-analysis with a random-effects statistical model was used. And the study by Bate (2021) used the same methodology adopted by the GEI to analyze the EEs of the BRICS countries, also combining quantitative and qualitative methods.

Consequently, the research enabled us to develop perspectives on the development of the entrepreneurial ecosystem in South Africa. The next section begins with articles from the first perspective, which address structural issues such as regional inequalities and access to financing. The second section discusses the strategic role of universities and technology hubs in promoting innovation and human capital formation. The third section presents articles with regional examples that highlight local initiatives to overcome obstacles. In the latter perspective, these are studies that explore the influence of BRICS as a catalyst for the exchange of practices, international collaboration, and strengthening of entrepreneurship in the country, pointing to paths for more inclusive and sustainable economic development.

PERSPECTIVES ON ENTREPRENEURIAL ECOSYSTEM IN SOUTH AFRICA

Entrepreneurial ecosystems are understood as an organized set of interdependent components that enable productive entrepreneurship in a specific location (Isenberg, 2011; Stam, 2015). Such ecosystems involve dynamic local, social, institutional, and cultural processes and actors that encourage and enhance the formation and growth of new businesses, supported by a favorable infrastructure, enabling regional economic development (Boucher; Cullen; Calitz, 2024).

In light of the above, the literature review revealed that the outlook for the entrepreneurial ecosystem in South Africa is ambivalent, reflecting both structural challenges and promising opportunities. Integration with BRICS, academic initiatives, and supportive policies have the potential to boost entrepreneurship, but barriers such as limited access to financing and regional inequalities still limit progress. This section presents data that contributes to the contextualization of entrepreneurship and the nation's entrepreneurial ecosystem. Following this, the

perspectives that encompass the main themes of the texts analyzed in the systematic literature review are unpacked.

According to Bowmaker-Falconer and Meyer's (2022) special report, "Fostering Entrepreneurial Ecosystem Vitality," for the GEM, South Africa's EE requires revitalization and focused government attention, with infrastructure investments central to the development of the capital-driven economic plan, involving a combination of the public and private sectors. Attention is also needed to unemployment levels, especially among young people, the crime scene, which impacts individuals' lives, negatively affecting profits and entrepreneurial potential, and corruption and fraud, which are historical factors in South African society, gaining greater proportions over the years and negatively impacting the country's economy. Furthermore, according to the National Entrepreneurship Context Index (NECI), the country's score in 2022 was 4.1, falling to 3.9 in 2024, ranking among the ten lowest among the 49 economies participating in the GEM (2025).

It is understood that entrepreneurship, being a multilayered social phenomenon, is difficult and complex to develop adequate ways to measure it. The Global Entrepreneurship Index (GEI) emerged as a comprehensive measure that captures the different dimensions of the entrepreneurial ecosystem at the national level, bringing national values to the GEI based on three fundamental blocks - entrepreneurial attitudes, entrepreneurial skills, and entrepreneurial aspirations - in addition to the 14 pillars that comprise the index (Ács et al., 2019, p. 25).

The first block, Entrepreneurial Attitudes, addresses how society views entrepreneurship and captures cultural and social aspects related to the topic. The second block, Entrepreneurial Skills, examines the profile and qualifications of entrepreneurs and the capacity of businesses to grow steadily. The third block, Entrepreneurial Aspirations, reflects the desire to scale and transform

businesses. By combining individual and institutional variables, the GEI enables a comprehensive understanding of entrepreneurial ecosystems, highlighting both the capabilities and obstacles each country faces in its innovation-driven economic development process. For South Africa, Chart 2 is presented:

Quadro 2 – Global Entrepreneurship Index - África do Sul

	PILLARS		INSTITUTIONAL VARIABLES		INDIVIDUAL VARIABLES	
Entrepreneurial Attitudes	Opportunity Perception	0.42	Market Aglomeration	0.53	Opportunity Recognition	0.60
	Startup-sSkills	0.07	Tertiary Education	0.21	Skill Perception	0.49
	Risk acceptance	0.43	Business Risk	0.44	Risk Perception	0.78
	Networking	0.31	Internet Use	0.51	Know Entrepreneurs	0.49
	Cultural Support	0.38	Corruption	0.49	Career Status	0.72
	Entrepreneurial Attitudes					28.76
Entrepreneurial Abilities	Opportunity Startup	0.34	Economic Freedom	0.52	Opportunity Motivation	0.53
	Technology Absortion	0.21	Tech absortion	0.71	Tecnology Level	0.39
	Human Capital	0.25	Staff Training	0.66	Educational Level	0.30
	Competititon	0.63	Market Dominance	0.65	Competitors	0.85
	Entrepreneurial Abilities					31.19
Entrepreneurial Aspirations	Product Innovation	0.54	Technology Transfer	0.56	New Product	0.73
	Process Inovation	0.50	Gross Domestic Expenditure on Research and Development	0.55	New Tech	0.95
	High Growth	0.55	Business Strategyo	0.57	Gazelle	0.74
	Internacionalization	0.49	Globalization	0.54	Export	0.70
	Risk Capital		Depth of Capital Market	0.86	Informal Investiment	0.30
	Entrepreneurial Aspirations					37.99
	GEI	**32.65**	**Institutional**	**0.56**	**Individual**	**0.61**

Fonte: http://thegedi.org/tool/.

The highest-rated pillar is entrepreneurial aspirations, with 37.99 points, followed by entrepreneurial skills (31.19) and, finally, entrepreneurial attitudes (28.76). This performance reflects all three main blocks indicated in dark blue, signaling that, in global comparisons, the country remains above average in its overall performance across the three GEI domains. However, when analyzing the data disaggregated by institutional and individual variables, it becomes clear that there are serious deficiencies in fundamental aspects for strengthening the entrepreneurial ecosystem.

In the entrepreneurial attitudes block, the "Start-up Skills" pillar has a low value (0.07), reflecting individuals' lack of confidence in their abilities to start a business. This limitation is strongly associated with the low quality of tertiary education in the country, whose corresponding institutional variable is only 0.21. Added to this is the poor performance in “Networking” (0.31), indicating a weak network of contacts and little access to entrepreneurial models — an essential factor for the formation of new entrepreneurs.

In the entrepreneurial skills pillar, challenges remain evident. Technology absorption has a score of 0.21, accompanied by an equally low individual level of technological use (0.39), demonstrating that many companies still operate with outdated technologies. Furthermore, the "Human Capital" pillar scores only 0.25, reinforcing the lack of entrepreneurs with solid training, with a negative emphasis on individual educational attainment (0.30), a direct indicator of the quality of the country's entrepreneurial force.

Among entrepreneurial aspirations, despite the good overall performance, there is a critical weakness in the "Informal Investment" variable, with an index of only 0.30. This highlights a lack of informal financing networks, such as support from friends and family, which are essential, especially in the early stages of ventures. On the other hand, South Africa stands out with excellent performance in specific areas. In the entrepreneurial attitudes group,

"Risk Perception" scores 0.78, demonstrating that individuals have a good tolerance for risk, an important quality for entrepreneurs. Among entrepreneurial skills, the individual variable "Competitors" scores 0.85, indicating that many products or services offered are perceived as differentiated from the existing market - a sign of competitive advantage and innovation.

In the aspirations pillar, the "New Tech" indicator, with 0.95, is the highest of all components, demonstrating that some entrepreneurs are indeed at the technological frontier. Furthermore, the institutional variable "Depth of Capital Market" scores 0.86, revealing that the country has an infrastructure for institutional venture capital, which can benefit companies with greater scalability potential. In short, while South Africa has a promising foundation regarding aspirations and certain dimensions of attitudes and skills, the country still faces structural bottlenecks in human capital, higher education, support networks, and informal investment. These weaknesses need to be addressed with integrated policies so that the South African entrepreneurial ecosystem can reach its full potential.

Challenges and structural necessities

From the articles analyzed, it was evident that South Africa's entrepreneurial ecosystem (EE) faces significant barriers to its development, such as bureaucracy, lack of infrastructure, and difficulties in accessing markets and human capital. These challenges are compounded by regional disparities and a business environment that does not prioritize informal and rural entrepreneurship, thereby weakening entrepreneurial spirit. Given this, the perspective of challenges, needs, and possible solutions was chosen as the first to be presented, as it offers a clearer picture of the current conditions when studying the entrepreneurial ecosystem at the national level in South Africa.

First, one structural challenge identified by scholars relates to corruption and government effectiveness, which limit the country's potential for social and economic transformation. As noted by Rani and Kumar (2021), ineffective corruption control in developing countries reduces entrepreneurs' and investors' confidence. In South Africa, they point out that recurring corruption cases undermine economic predictability, create legal uncertainty, and hinder the establishment of sustainable businesses. To mitigate these impacts, it is essential to strengthen oversight institutions, increasing transparency and trust in the business environment.

The second frequently cited challenge is the difficulty in accessing domestic credit. Venture capital, which is vital for the survival of startups and small businesses, is scarce or inaccessible, especially in peripheral areas and for low-income entrepreneurs. This problem is worsened by the concentration of financial resources in a few institutions and by the lack of integrated support from universities and innovation centers (Rani; Kumar, 2021).

This point is also raised by Lee and Kim (2025) in their analysis of determinants and priorities in ICT startup ecosystems in Nigeria, Kenya, and South Africa. They note that despite the growth of entrepreneurship and investment in African startups, these countries' ecosystems still face challenges such as weak support structures, inadequate government policies, high taxes, political instability, limited access to seed funding, and insufficient infrastructure and resources. Specifically, South Africa faces a conservative investment climate and limited venture capital for early-stage startups, despite having a strong financial system and academic infrastructure. There is an urgent need for a more stable investment environment and better exit strategies.

Wadee and Padayachee (2018) identify a third major challenge: the act of entrepreneurship has been underestimated and hindered by colonial-era preconceptions that dampen the entrepreneurial spirit of the South African

population. Additionally, there is a negative stereotype of African entrepreneurs—mostly informal—held by foreigners. Universities also fail to recognize the importance of the informal and rural sectors in their programs and curricula, which diminishes the relevance of these spaces given their formative, encouraging, and collaborative roles in EE development.

Similarly, Swartz, Marks, and Scheepers (2020) argue that even though South Africa's environment is dynamic for enterprise development and support, the legacy of Apartheid created cultural, institutional, and structural barriers to entrepreneurship. As a result, access to financing and financial skills is the most frequently cited barrier by entrepreneurs in their study, especially women entrepreneurs. They also highlight geographical obstacles - the fourth challenge - since entrepreneurs in areas far from major centers (Gauteng and Western Cape) have difficulty accessing resources from venture support organizations.

In the work of Fubah and Moos (2022), the difficulties faced by entrepreneurs during the COVID-19 pandemic - especially SMEs - are highlighted as the fifth major challenge, as they presented a set of recent circumstances for several EEs. According to the authors, these businesses experienced drastic reductions in economic activity, with many reporting revenues drops close to 100% during the first six months of lockdown. Additionally, between 60% and 70% of clients canceled contracts, deepening the financial crisis.

In seeking solutions to these adversities, it was important for entrepreneurs to adopt adaptive strategies such as reducing service prices and maintaining a positive entrepreneurial mindset. Another crucial strategy was networking, identified as an essential mechanism for sharing information and creating business opportunities, also emerging as a structural need for the EE. As stated, "[n]etworking was identified as a coping mechanism for all businesses, regardless of size" (Fubah; Moos, 2022, p. 15).

These responses highlight SMEs' capacity to innovate and adapt in times of crisis but also reinforce the need for greater government support. Measures such as financing, consulting, and training are relevant to help companies face emergencies and strengthen their long-term resilience (Fubah; Moos, 2022; Lee; Kim, 2025). Thus, these authors emphasize that flexibility, innovation, and funding are part of the solutions to ensure SMEs' survival and foster their continuous growth in a challenging environment, as well as to improve inequality structures and expand market revenue.

Regarding the structural needs for EE development, Wadee and Padayachee (2018) explore challenges and possible solutions to support innovation, job creation, and entrepreneurial spirit among recent graduates in the country. Throughout their text, they mention government policies, initiatives, strategies, and decrees for promoting and regulating entrepreneurship in South Africa, such as the 1995 White Paper and the 2005 Unlocking Potential in an Enterprising Nation program. However, the authors show, through secondary data, that these initiatives have not significantly contributed to job creation or business growth.

Meanwhile, Swartz, Marks, and Scheepers (2020) stress the importance of contextualization in emerging economies for EE development and point to the relevance of another government development program—the Entrepreneurial Development in Higher Education (EDHE) - run in partnership with historically disadvantaged South African universities and U.S. universities for knowledge transfer and angel investment. The EDHE program is also a relevant point in Sambo's (2018) work, which is better discussed in the second perspective.

From the studies cited, it is clear that government effectiveness plays a central role in promoting entrepreneurship. Despite the potential to generate jobs and innovation, the lack of effective government programs in South Africa - programs that could be better structured by the Department of Trade and Industry

and the Small Enterprise Development Agency, for example - undermines the expansion of new businesses (Ogujiuba; Eggink; Olamide, 2023; Swartz; Marks; Scheepers, 2020). Solutions mentioned by Rani and Kumar (2021), Ogujiuba, Eggink, and Olamide (2023), Wadee and Padayachee (2018), and Lee and Kim (2025) include policies that expand credit for micro and small businesses, as well as public-private partnerships to finance business initiatives.

Therefore, it is understood that South Africa's entrepreneurial ecosystem faces structural challenges that limit its transformative potential, such as inequality, corruption, difficulty in accessing credit, bureaucracy, and lack of effective government support. These problems hinder the development of SMEs, which are essential for job creation and innovation. Consequently, the studies suggest that overcoming these barriers requires implementing inclusive public policies, simplifying bureaucratic processes, fostering innovation, and promoting a stronger entrepreneurial culture combined with training, consulting, financing, and the integration of rural and urban communities and universities into the EE. These are fundamental to creating a sustainable and resilient environment that promotes economic and social growth and drives the success of SMEs in the country.

Role of universities and technology hubs

The second perspective was the most prominent among the studies selected for the systematic literature review. Here, we present works that discuss the relevance of public policies represented by research institutions and educational institutions - namely, the role of universities and technology hubs - as addressed by Isenberg (2011) in formulating one of the key concepts for entrepreneurial ecosystems. This concept emphasizes the importance of six interconnected domains for entrepreneurial success: finance, public policy, culture, support, human capital, and market access.

Within this framework, universities can be placed in the public policy domain - as research institutions - and in the human capital domain - as educational institutions. They emerge as fundamental elements in strengthening various domains, acting as catalysts for innovation, human capital formation, and entrepreneurial support. As teaching and research institutions, they play a central role in connecting entrepreneurs to knowledge, infrastructure, and collaborative networks. However, regulatory barriers and a lack of skills limit the impact of these initiatives (Høvig et al., 2023).

In this context, universities have the potential to expand their relevance by integrating efforts from different sectors, promoting the creation of technology hubs and development programs that address critical ecosystem gaps such as access to financing, infrastructure, and professional training. In turn, technology hubs stand out as platforms that democratize access to innovation, although challenges such as financing and networking still limit their reach and impact (Atiase; Kolade; Liedong, 2020).

The importance of such initiatives is highlighted by Sambo (2018), who discusses the intra-entrepreneurial ecosystem within South African universities. He points to the introduction of the Entrepreneurial Development in Higher Education (EDHE) platform by the South African government to promote entrepreneurship within universities and evaluates through a literature review how conducive the internal university environment is to entrepreneurial activity. According to the author, the university-based entrepreneurial ecosystem includes multiple levels - individuals, groups, organizations, events, and the stakeholder community - providing infrastructure, resources, and means to develop entrepreneurial communities.

Sambo (2018) also notes that structural conditions for intrapreneurship in universities are insufficient, hindered by bureaucracy, lack of resources, and environments that discourage innovation. Therefore, it is important for

universities to invest in leadership, organizational capacity, proactivity, and the integration of entrepreneurship into teaching and learning to foster the ecosystem.

In the study by Ismail et al. (2024), similar issues were observed, showing that even though research portrays the entrepreneurial scenario within universities, challenges persist. Solutions have been proposed, but the barriers to implementing them reveal the systemic nature of the problems affecting economic growth and EE development.

Ismail et al. (2024) therefore suggest that universities should adopt a holistic and synergistic approach to supporting student entrepreneurship, ensuring comprehensive offerings, securing top management support and funding, engaging in external collaborations, fostering inter-university cooperation, and tailoring student entrepreneurship strategies to their unique geographic and historical contexts.

Focusing on academic spin-offs - which have historically low levels in South Africa - Høvig et al. (2023) examine the role of investors in developing spin-offs through interactions with academic entrepreneurs and technology transfer agencies. Their study concludes that, as in other countries, academic spin-offs face regulatory barriers, a lack of entrepreneurial and market competencies among researchers, and a lack of networks to commercialize technologies. As a result, they become less attractive to investors, despite the relevant research and technologies developed in universities.

Also addressing technology development, Atiase, Kolade, and Liedong (2020) extend beyond universities to explore the emergence and implications of “Do It Yourself” (DIY) technology hubs for knowledge production, value creation, and job generation in some African countries, including South Africa. They argue that these hubs are platforms for grassroots technological innovation and

scientific democratization, developing and popularizing technology initiatives and providing access to people outside traditional academic environments.

According to their study, hubs generate economic and social value through job creation, income growth, expanded investment funds, and impacts on governance and public sectors. They offer an unorthodox platform for applying resources in ways that combine to overcome constraints, provide more learning opportunities for entrepreneurs to develop products, exchange ideas, network, and foster innovation. However, they face the same challenges discussed by other authors - competition for scarce credit in African countries, difficulty attracting users to the spaces, and challenges in building connections with external collaborators and resources.

Despite these advantages and the important role of hubs, Iwu et al. (2024) contend that the relationship between business incubation systems and the growth of African family businesses needs more exploration, given the significance of family firms to African economies and the proliferation of entrepreneurship studies. They highlight South Africa as a model for the continent in using incubation systems to support the small business sector, with benefits such as longevity, networking, knowledge transfer, and EE enhancement. Nonetheless, family firms face difficulties with succession planning, nepotism (preferential treatment of relatives), and risk management.

A key issue in the difficulty of realizing or scaling innovative ideas offered by technology hubs and incubators in the South African context is measuring the effectiveness of these initiatives, as discussed by Trethewey-Mould and Moss (2024). The authors found that environmental factors negatively impact the perceived effectiveness of incubators, including resource scarcity (difficulty accessing sustainable funding, overreliance on government funds, lack of incubator management talent) and prohibitive contexts (lack of political/legislative support, scarcity of high-quality businesses entering incubation programs, and a

challenging business environment). These issues create conflicts between incubators and stakeholders regarding mutual expectations for business incubation success.

Therefore, universities and technology hubs must transcend their traditional roles, fostering greater integration with strategic sectors and aligning their efforts with the real needs of the entrepreneurial ecosystem. This connection will allow them to act as facilitators of structural change, overcoming barriers such as bureaucracy and lack of financing while democratizing access to innovation, strengthening the social and economic impact of their initiatives, and aligning their expectations with the growth goals of the companies they support. Viewing these institutions as central agents - capable of building collaborative networks and disseminating innovative practices - is essential for more inclusive and sustainable development in South Africa, provided their effectiveness is monitored in connection with other ecosystem actors (government, private-sector funders, communities).

Examples within the South African macro entrepreneurial ecosystem

Regarding this third perspective, we group together articles that address specific regions of South Africa that are attempting to develop their own local entrepreneurial ecosystems. These examples are understood to be encompassed within the broader South African entrepreneurial ecosystem presented in the other nationally focused texts and are therefore considered part of a macro ecosystem.

It is known that entrepreneurial ecosystems are multifaceted structures composed of interconnected networks of stakeholders, financial and intellectual support, as well as policies and programs that sustain entrepreneurial behavior. This definition, reinforced by Msimango-Galawe and Majaja (2022), highlights the importance of an integrated system to strengthen entrepreneurship, especially in

challenging contexts such as those of developing economies - for example, South Africa.

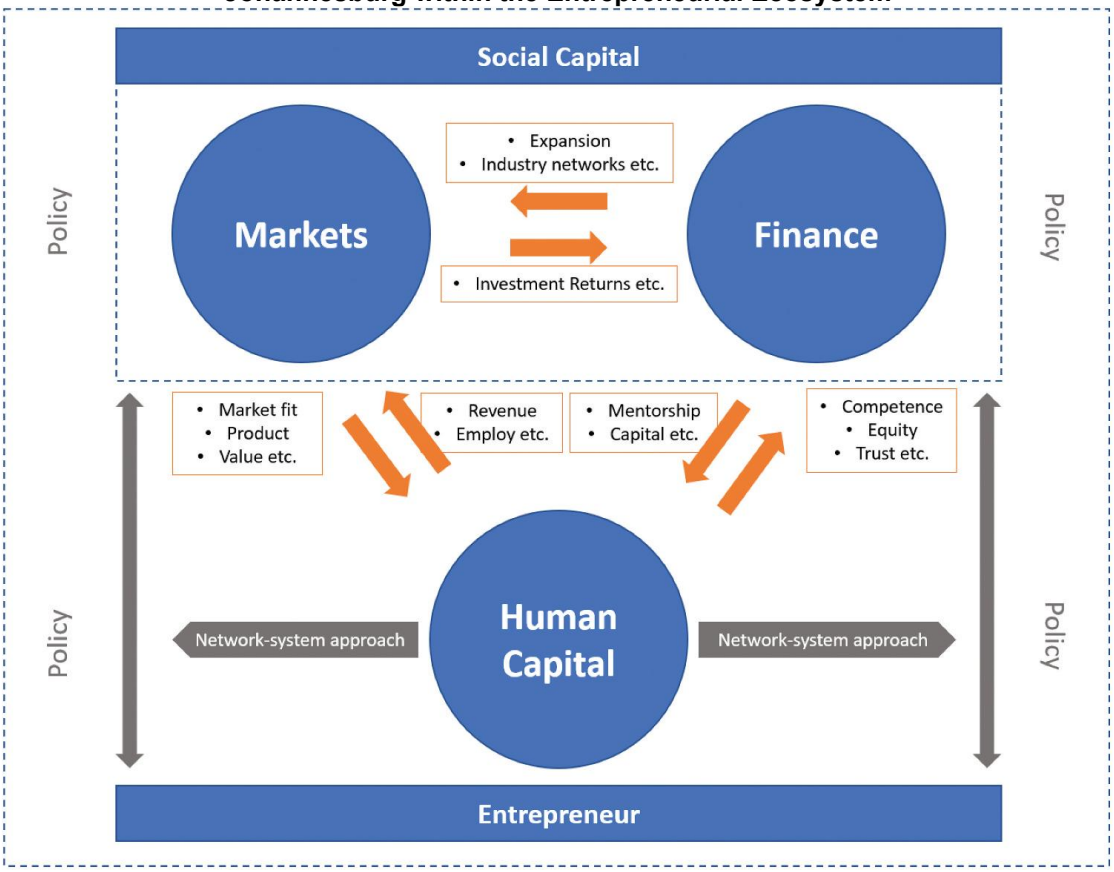
In this context, the role of government is crucial. All the authors cited here emphasize this role as that of a facilitator, promoting public policies that not only encourage the emergence of new ventures but also ensure the sustainability of existing ones. This means the government must create favorable conditions for small and medium-sized businesses - particularly those located in economically disadvantaged areas - to overcome structural barriers and compete in broader markets. Furthermore, the consolidation of a robust entrepreneurial ecosystem depends on cooperation between government, the private sector, and other economic actors.

Figure 1 presents a conceptual framework detailing the main challenges and needs faced by entrepreneurs in the Johannesburg entrepreneurial ecosystem (COJ). Based on Isenberg's (2011) model, the figure maps how the domains of markets, finance, and human capital are interconnected through formal and informal networks, mediated by social capital. These domains represent important areas for entrepreneurial success and are influenced by factors such as market access, financial support, entrepreneurial education, and mentorship.

This demonstrates that the city of Johannesburg is presented as an example of an entrepreneurial ecosystem developing within South Africa's EE. The entire framework constructed by Msimango-Galawe e Majaja (2022) adopts a network systems approach, in which interactions between the domains are mediated by connectivity, density, fluidity, and diversity, and functions to address the needs of entrepreneurs, who use social capital as a basis for accessing resources and fostering innovation. Interactions in the ecosystem are facilitated by formal and informal networks, mutual trust, and value exchanges. The main challenges faced by

entrepreneurs are access to markets (67%), equipment (60%), suppliers (54%), financial management (50%), marketing and public relations professionals (45%), and entrepreneurial education (42%) (Msimango-Galawe; Majaja, 2022).

Figure 1 – Mapping the Critical Challenges and Needs of Entrepreneurs in the City of Johannesburg within the Entrepreneurial Ecosystem



Source: Msimango-Galawe e Majaja (2022).

As a second example, we have the entrepreneurial ecosystem in Nelson Mandela Bay, portrayed in two works by Boucher, Cullen, and Calitz (2023; 2024). In the 2023 text, the authors present a series of structural and cultural challenges that hinder business growth and sustainability in the region, and thus the development of this ecosystem. In the 2024 text, the objective was to investigate how urban planning affects entrepreneurial ecosystems (EEs) in the same metropolitan region.

They conclude that, despite its economic and cultural diversity, Nelson Mandela Bay faces significant obstacles, such as low levels of innovation, difficulty accessing markets, a high concentration of microenterprises - which generally have limited financial and human resources - and poor land-use management due to bureaucratic processes for zoning land for commercial activities. Such factors restrict entrepreneurs' ability to attract investment, grow, and generate large-scale employment.

Boucher, Cullen, and Calitz (2023) observe that 87.4% of the businesses in the studied region fall into the microenterprise category, evidencing an economic imbalance given the prevalence of necessity-driven entrepreneurs and limited knowledge of management and business strategies. This scenario results in a reduced economic impact, contributing to persistently high unemployment and poverty rates. Moreover, the dependence on short-term solutions and the lack of scalability of these businesses hinder the transition to larger categories, which could attract more investment, increase productivity, and improve market competitiveness.

Furthermore, although the local culture is recognized as a catalyst for entrepreneurial attitudes, it also presents characteristics that limit ecosystem development. The authors identify a culture of dependence on the government, fear of failure, and a perception of entrepreneurship as merely a solution to the lack of formal jobs. These factors create barriers to risk-taking and innovation. Additionally, Nelson Mandela Bay suffers from the consequences of poor oversight by metropolitan leadership, as challenges related to land use are not prioritized, and infrastructure maintenance is lacking - factors that affect the metropolitan area's economic development and worsen inequality between different groups (Boucher; Cullen; Calitz, 2023; 2024).

The third example explores the contextual factors that influence the disruptive innovation capacity of new technology-based firms (NTBFs) in South

Africa, specifically in Gauteng Province. The authors highlight that the country has socioeconomic dynamics that encourage the development of disruptive innovations, despite the low success rate of small businesses. Dzimba and Van der Poll (2022) also argue that, although the entrepreneurial ecosystem has enabling policies, funding, supporting institutions, knowledge transfer, and other structures and external factors for disruptive innovation, the quality of linkages between institutions and the operational environment is weak. The disruptive innovation capacity of a South African NTBF depends on its ability to negotiate the “missing links” - that is, to continually overcome external challenges and constraints.

The fourth example is presented in an article by Ogujiuba, Eggink, and Olamide (2023), which examines the effects of financing and business support on SMEs in Mpumalanga Province. According to the authors, these factors positively influence entrepreneurial ecosystem development only when applied separately; if implemented simultaneously, the ecosystem may be harmed due to overlapping objectives. In fact, they use the example of Mpumalanga Province as a reflection of South Africa’s macro-EE, and affirm that, as an emerging economy, it is important to separate financing objectives from other business support measures, as shown by the model they developed and tested in their research.

Therefore, we can see attempts to develop entrepreneurial ecosystems in important regions of South Africa. However, the challenges for these ecosystems to consolidate are similar to those portrayed by authors of other texts reflecting on the macro–South African EE. Similarly, Msimango-Galawe and Majaja (2022) and Boucher, Cullen, and Calitz (2023; 2024) propose as a solution a transformation of the entrepreneurial ecosystem of Johannesburg and the Nelson Mandela Bay metropolitan region. Recommended measures include promoting innovation strategies, ensuring more effective government

involvement in priority sectors such as educational policies and programs aimed at developing entrepreneurial skills, and creating more favorable conditions for sustainable economic growth.

In short, as Dzimba and Van der Poll (2022) point out, for innovation to occur in the country, it is necessary to continuously overcome external challenges and constraints by negotiating the missing links, those among the six interconnected domains for entrepreneurial success mentioned earlier. This underscores the relevance of creating models and research that better understand South Africa's diversity and, consequently, the entrepreneurial ecosystem(s) within this environment, as Ogujiuba, Eggink, and Olamide (2023) emphasize. It also highlights the importance of government action in creating entrepreneurship promotion policies aligned with local characteristics, considering the complex interactions between EE elements.

Mentions of BRICS

In this final perspective, the studies reviewed highlight mentions and themes regarding BRICS involvement and South Africa's entrepreneurial ecosystem. From the outset, it was evident that few articles address the relationship between the country's EE and its participation in BRICS. For example, the work of Rani and Kumar (2021) examines the relationship between entrepreneurial activities, the reduction of income inequality, and the improvement of human development in BRICS countries. In the literature reviewed by the authors, few studies were found on the relationship between entrepreneurial activities and the other factors mentioned. This study used secondary data from indicators such as the World Development Indicators, Global Entrepreneurship Monitor, World Inequality Database, and Human Development Reports.

The results emphasized by the authors show a positive influence of total entrepreneurial activities on the HDI of the bloc's countries, but not a significant influence on income inequality, while trade exerts a positive impact on this dimension. Therefore, they interpret that entrepreneurship and income inequality tend to change simultaneously, and that HDI tends to reduce inequality among BRICS countries through the increase of human capital. Furthermore, the authors argue that entrepreneurship could be used as a tool for upward socioeconomic mobility of individuals, and that human capital formation is the most important aspect to be considered by BRICS countries, as it reduces inequality and fosters an entrepreneurial culture within societies (Rani; Kumar, 2021).

Coincidentally, another article by Rani and Kumar (2022) also highlights the opportunities for collaboration among the bloc's member countries. They argue that by aligning with the practices and initiatives of other BRICS members, South Africa can strengthen its entrepreneurial ecosystem and contribute to inclusive and innovative growth within the group. The authors note that although investment in incubators and training programs has advanced, the nation still needs to consolidate an integrated national strategy that promotes both economic growth and social inclusion, aligning with BRICS' goals of transitioning toward innovation-based economies.

Therefore, the role of the South African government - just as in other BRICS countries - is central to fostering an entrepreneurial culture and turning challenges into opportunities. Effective measures that prioritize access to credit, the use of ICTs, and the strengthening of human capital are fundamental for the country not only to keep pace with the bloc's transition but also to stand out as a model of inclusive and sustainable growth within BRICS. Thus, South Africa's integration into BRICS reinforces the bloc's strategic role in supporting the entrepreneurial ecosystem (Rani; Kumar, 2022).

Bate (2021) provides a comparative analysis of the entrepreneurial ecosystems of BRICS countries, focusing on a comparison between Brazil, India, and South Africa, using GEI data from 2012 to 2018. The author highlights that South Africa ranked among the low-performing countries in the GEI regarding startup skills, networks, technology absorption, human capital, and venture capital pillars. He stresses the importance of the South African government focusing on these pillars and on the education system to improve the development of its entrepreneurial ecosystem, which would help maintain its entrepreneurial leadership among sub-Saharan African countries.

Considering the above, and in agreement with Bate (2021), more studies involving BRICS countries and the theme of entrepreneurial ecosystems are needed to better explore the collective development efforts proposed by member states - especially with the entry of new members that will change the bloc's current dynamics. This would also enable a better understanding of how this dynamics influences the development of local entrepreneurial ecosystems and allows for the proposal of new alternatives to address identified bottlenecks, thus promoting these ecosystems.

FINAL CONSIDERATIONS

Based on a systematic literature review of articles on South Africa and entrepreneurial ecosystems, it was possible to establish an overview of the subtopics, highlighting common points portrayed by scholars as well as areas for improvement for the continuous development of the South African entrepreneurial ecosystem.

Many articles point to the government's role as fundamental to the success of entrepreneurs and, consequently, the prosperity of the entrepreneurial ecosystem. Even with reservations regarding the dependency created by small businesses and entrepreneurs on government support, this relevant role cannot be denied given the dimensions that connect an entrepreneurial ecosystem. A dichotomy is observed in these actions when the articles studied here demonstrate the difficulty of implementing policies and the country's economic development rate remaining below 1.5% for consecutive years. Continuous monitoring of the South African scenario is necessary to evaluate how entrepreneurial ecosystems will develop.

Regarding universities, studies show their strategic role in promoting innovation, human capital, and the formation of entrepreneurial networks, although they still face structural, bureaucratic, and cultural barriers (Høvig et al., 2023; Sambo, 2018). Future research could further explore how these institutions can more effectively integrate into the South African entrepreneurial ecosystem, expanding their impact and connecting different sectors of society.

The COVID-19 pandemic revealed the fragility of South African SMEs in the face of unexpected crises, with severe drops in revenue and mass contract cancellations, as reported by Fubah and Moos (2022). This scenario underscores the need for future research to explore resilience mechanisms and more effective public policies to face instability in the entrepreneurial ecosystem.

During the initial database search, five studies addressing entrepreneurship and South African women were found, focusing on difficulties in access, financing, opportunities, and barriers they face when starting businesses, but none placed women within the context of entrepreneurial ecosystems. Only the works of Bowmaker-Falconer, Meyer, and Samsami (2024) and Swartz, Marks, and Scheepers (2020) briefly contextualize conditions of female entrepreneurs and the entrepreneurial environment, highlighting the need for interventions that promote female entrepreneurship to advance gender equity within an entrepreneurial ecosystem. However, despite mentions of the importance of women as entrepreneurs, more research including them in the context of the country's entrepreneurial ecosystem development is necessary.

That said, research related to South Africa and entrepreneurial ecosystems is relatively recent; however, the presented studies offer limited data about the country's condition, often relying on secondary sources or broad literature on related themes to support justifications about the South African reality. It is understood that the entrepreneurial ecosystem in South Africa is developing, and its participation in BRICS opens doors for improvements such as opportunity perception, entrepreneurial skills, investments, and more research to understand the diversity and specifics of the country's regions, where entrepreneurial ecosystems are also noted. Therefore, cultural issues should be better explored by authors to provide perspectives on important dimensions of entrepreneurial ecosystems, such as human capital and local entrepreneurial culture.

Finally, to strengthen South Africa's entrepreneurial ecosystem, it is essential to adopt an integrated approach that considers the internal challenges faced by the country. This includes implementing effective government policies, developing entrepreneurial training programs with continuous university

involvement, promoting a culture of innovation, and integrating rural and urban communities.

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