RETHINKING THE BARRIERS TO STUDENT ENTREPRENEURSHIP IN THE DIGITAL AGE – INFLUENCE OF AI

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ABSTRACT

This article explores the diverse obstacles that inhibit student engagement in entrepreneurial activities in the context of contemporary higher education and digital transformation. Drawing on recent studies and policy reports, it presents a revised framework for categorizing these barriers and proposes a more nuanced understanding of how institutional, cultural, and individual-level dynamics intersect to shape students' entrepreneurial intentions. The study offers practical recommendations for universities and policymakers to create enabling environments for entrepreneurial action.

Keywords: students, entrepreneurial barriers, entrepreneurial intentions, financial barriers, psychological barriers, educational support, institutional support, youth entrepreneurship.

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აბსტრაქტი

სტატიაში განხილულია დაბრკოლებები, რომლებიც ხელს უშლიან სტუდენტების ჩართულობას სამეწარმეო საქმიანობაში. ბოლოდროინდელ კვლევებსა და პოლიტიკურ ანგარიშებზე დაყრდნობით, მასში მოცემულია ამ ბარიერების კატეგორიებად დაყოფის გადამუშავებული ჩარჩო და უფრო დეტალურ ასახავს სტუდენტების სამეწარმეო განზრახვების ჩამოყალიბებაში ინსტიტუციური, კულტურული, აგრეთვე ინდივიდუალური გარემოებების დინამიკას. ნაშრომი უნივერსიტეტებსა და პოლიტიკის შემქმნელებს სთავაზობს სამეწარმეო საქმიანობისთვის ხელსაყრელი გარემოს შექმნის პრაქტიკულ რეკომენდაციებს.

საკვანძო სიტყვები: სტუდენტი, სამეწარმეო ბარიერები, სამეწარმეო განზრახვები, ფინანსური ბარიერები, ფსიქოლოგიური ბარიერები, საგანმანათლებლო მხარდაჭერა, ინსტიტუციური მხარდაჭერა, ახალგაზრდული მეწარმეობა.

1. INTRODUCTION

In recent years, universities have increasingly emphasized entrepreneurship as a crucial skill set for navigating the volatile and rapidly evolving labor market (European Commission, 2020). Digital technologies and artificial intelligence (AI) have expanded access to knowledge, tools, and networks, seemingly lowering entry barriers for aspiring entrepreneurs (Sedkaoui, 2018; Chen, Zhang & Liu, 2024). Yet paradoxically, actual entrepreneurial participation among students remains relatively low (GEM Reports; Al-Fattal, 2024). This discrepancy raises critical questions about what continues to deter students despite favorable conditions.

While existing frameworks highlight individual psychological and financial obstacles (Zhao et al., 2005; Fayolle, 2015), newer research suggests that these categories may be overly simplistic in light of ongoing digital and institutional transformations (Xanthopoulou & Sahinidis, 2024; Kröll & Burova-Keßler, 2021). This article proposes a more comprehensive analytical model to better understand the multifaceted nature of these deterrents.

2. CONCEPTUAL FRAMEWORK

To investigate barriers to student entrepreneurship in a way that reflects contemporary educational and technological shifts, we synthesize the insights from digital education policy (European Commission, 2020), ethical AI implementation (Ethikbeirat HRTech, 2020), and entrepreneurial education research (Sedkaoui, 2018; Zhu & Zhang, 2022).

We organize the discussion around five revised domains:

1. Resource Constraints;
2. Cognitive-Emotional Barriers;
3. Capability Gaps;
4. Systemic Institutional Frictions;
5. Socio-Normative Pressures;

Each domain reflects both structural and agent-level challenges that influence entrepreneurial decision-making.

3. REVISED TAXONOMY OF BARRIERS

This categorization expands the traditionally binary view of internal vs. external barriers and reveals interdependencies, such as how institutional weaknesses exacerbate psychological barriers.

RESEARCH HYPOTHESES

Hypothesis 1. Despite the increasing availability of digital technologies and AI, resource constraints (financial and institutional) remain the primary barriers to student entrepreneurship.

Hypothesis 2. Psychological factors (fear of failure, imposter syndrome, anxiety) have a stronger influence on students' entrepreneurial intentions than objective financial or educational limitations.

Hypothesis 3. Institutional barriers, such as the lack of mentorship and weak academia-industry linkages, exacerbate psychological and educational challenges, reducing the likelihood that students will launch their own startups.

Hypothesis 4. Insufficient awareness and training in AI and digital tools create additional obstacles for students from non-technical and humanities disciplines.

Hypothesis 5. Programs emphasizing safe, supportive environments and psychological support more effectively reduce barriers and facilitate the transition from entrepreneurial intention to action among students.

The study aims to address the following key research questions:

– What are the primary barriers inhibiting student entrepreneurship in the digital age?

– How do psychological and institutional factors interact to influence students' entrepreneurial intentions?

– How does the level of awareness about artificial intelligence opportunities affect students' entrepreneurial capabilities?

– What measures can effectively reduce existing barriers and promote entrepreneurial engagement among students?

Domain	Illustrative Factors	Representative Sources
Resource Constraints	Scarcity of capital, low access to grants or seed funding	Al-Fattal (2024); GEM Reports
Cognitive-Emotional Barriers	Entrepreneurial anxiety, imposter syndrome, failure aversion	Xanthopoulou & Sahinidis (2024); Liang, Xie & Sun (2021)
Capability Gaps	Limited entrepreneurial literacy, unfamiliarity with legal/regulatory environments	Chen, Zhang & Liu (2024); Fayolle (2015)
Systemic Institutional Frictions	Absence of incubators, weak academic-practitioner linkage, siloed curricula	OECD (2021); Botha, Makhuzeni & Van Wyk (2021)
Socio-Normative Pressures	Familial conservatism, low social acceptance of risk-taking careers	Zhu & Zhang (2022); Xanthopoulou & Sahinidis (2024)

Table 1. A Human-Centered Typology of Barriers

Category	How It Feels to Students	Examples	Key Sources
Financial	"I can't afford to take the risk."	No start-up capital, limited access to funding	Al-Fattal (2024); GEM (2023)
Psychological	"What if I fail? Will I be taken seriously?"	Fear of failure, low self-confidence, anxiety	Xanthopoulou & Sahinidis (2024)
Educational	"I don't know where to begin."	Lack of business skills, no clear roadmap	Zhao et al. (2005); Fayolle (2015)
Institutional	"My university doesn't support this kind of thing."	Few mentors, weak support infrastructure	OECD (2021); Al-Fattal (2024)
Cultural / Social	"My family thinks this is a waste of time."	Family pressure, negative stereotypes about entrepreneurship	Xanthopoulou & Sahinidis (2024)

METHODOLOGY

This article employs a mixed qualitative and quantitative approach to analyze barriers to student entrepreneurship. Data collection involved reviewing recent reports (e.g., GEM 2024/2025), scholarly literature, and policy documents. Additionally, the study synthesizes findings from previous empirical research and case studies to provide a comprehensive view of current obstacles and opportunities.

Methods include a systematic literature review, thematic analysis of key sources, and aggregation of statistical data to identify patterns. This multidisciplinary approach enables a deeper understanding of the multidimensional nature of these barriers.

The literature review covers key theoretical and empirical studies on student entrepreneurship, with a particular focus on changes driven by digital transformation and AI integration. It analyzes works related to financial, psychological, educational, institutional, and cultural barriers, while also examining contemporary approaches to entrepreneurial education and digital literacy.

Special emphasis is placed on research that expands traditional barrier models by highlighting their interconnections and multidisciplinary nature. This review thus provides a theoretical foundation for developing a more comprehensive analytical framework.

1. Breaking Down Barriers to Student Entrepreneurship

Entrepreneurship has become a defining interest for many students in higher education. Across universities worldwide, students express strong enthusiasm for starting their own businesses, driven by ideals of independence, creativity, and social impact. Despite this energy, only a small fraction take the leap into launching a venture during or shortly after their studies. This disconnect between interest and action is not just a question of skills or business plans. It reflects deeper psychological, cultural, and institutional factors that shape how students experience entrepreneurship.

Instead of viewing these barriers as fixed obstacles, this article takes a more human-centered lens, exploring how students interpret risk, seek support, and negotiate personal and social expectations. Drawing on recent research and policy reports (Al-Fattal, 2024; Xanthopoulou & Sahinidis, 2024; GEM, 2023), we identify key themes that recur across contexts, while acknowledging that each student's journey is unique.

Understanding the Experience of Barriers

Numerous studies have attempted to classify the challenges students face into categories such as financial, educational, or institutional. While helpful, this approach often obscures the personal meaning behind those categories. For example, "lack of funding" may be experienced not just as a financial issue, but as a feeling of exclusion or lack of validation. Similarly, institutional barriers may manifest as students feeling their ambitions are not taken seriously by faculty or peers (see table 1).

Reframing these barriers with a more empathetic perspective helps capture their emotional and social dimensions. As Xanthopoulou and Sahinidis (2024) argue, fear of failure and anxiety are often stronger deterrents than any tangible lack of resources.

These categories are not mutually exclusive. In many cases, they intersect. For instance, a lack of confidence may stem from both internal doubts and a lack of visible role models.

2. Discussion

A cross-cutting observation is that many barriers are perceived rather than strictly objective. For example, psychological limitations may stem not from intrinsic traits but from institutional environments that fail to normalize entrepreneurial experimentation (Kröll & Burova-Keßler, 2021). Likewise, students often conflate a lack of confidence with actual knowledge gaps, which suggests a need for embedded self-assessment tools (Liang, Xie & Sun, 2021).

Furthermore, digital transformation introduces both new tools and new expectations. While AI platforms like adaptive learning systems can individualize entrepreneurial education (Rossmann, Zimmermann & Hertweck, 2020), they may also create cognitive overload or ethical concerns (Alqahtani, 2023).

What Students Say They Need

Students often express a need not just for funding or information, but for emotional reassurance and peer validation. They want safe environments to test ideas, mentorship from people they can relate to, and flexible learning formats that allow them to explore entrepreneurship without risking their academic progress (Liang, Xie & Sun, 2021).

Programs that succeed in lowering barriers tend to focus on community and confidence-building as much as technical skills. For example, student incubators that offer

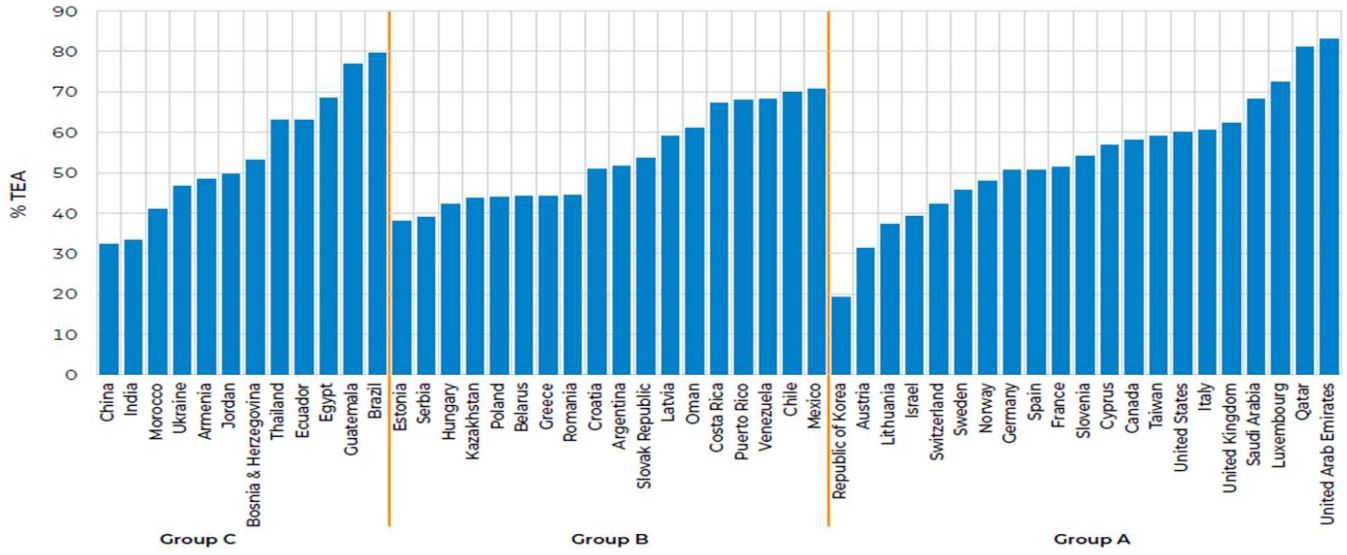

FIGURE 1 The percentage of early-stage entrepreneurs expecting to use more digital technologies to sell their products or services in the next six months (% TEA) ***(based on GEM 2024/2025 findings)***

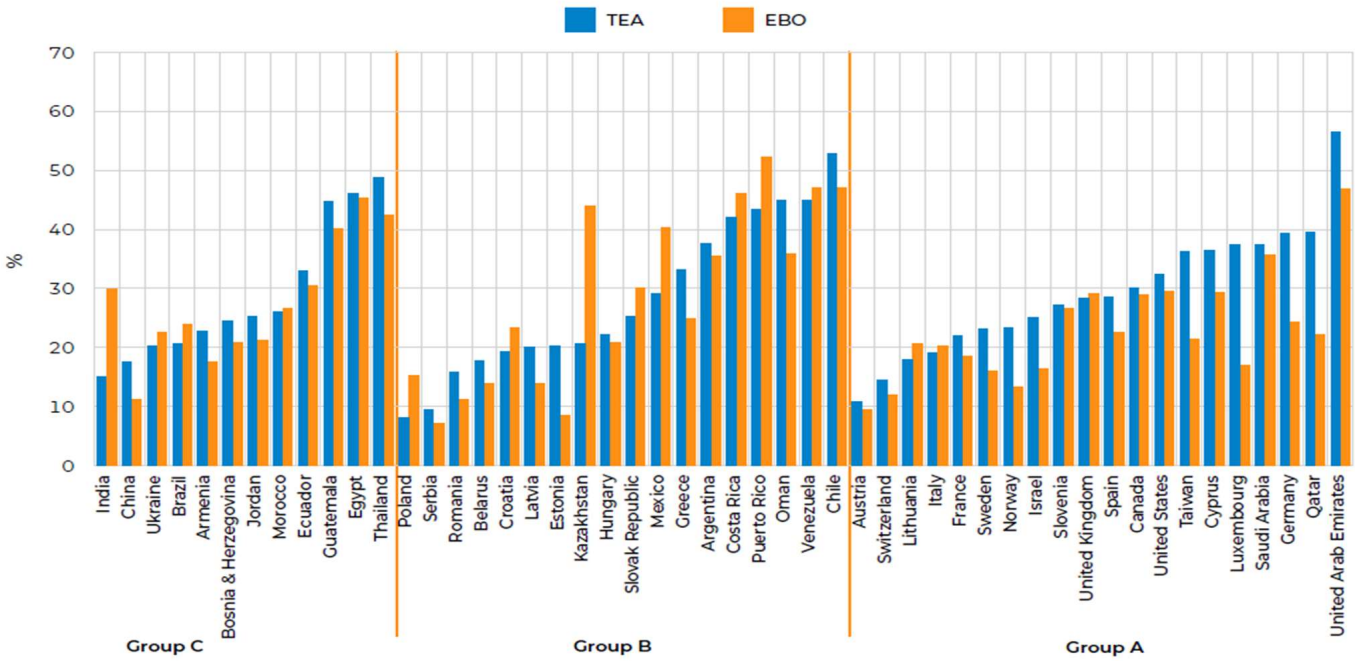

FIGURE 2. The proportion of early-stage entrepreneurs (% TEA) and Established Business Owners (% EBO) who anticipate artificial intelligence becoming very important to their business in the next three years (% TEA) ***(based on GEM 2024/2025 findings)***

low-stakes pitching sessions and storytelling workshops help normalize failure as part of the learning process (Botha et al., 2021).

3. DIGITAL TECHNOLOGIES AND AI AS A DOUBLE-EDGED FACTOR IN STUDENT ENTREPRENEURSHIP

Modern digital technologies and artificial intelligence (AI) are radically transforming the landscape of entrepreneurship, particularly among youth and students. According to the **GEM Global Report 2024/2025**, more than **50% of young entrepreneurs** in 30 out of 51 economies expect to use digital sales channels actively within the next six months (GEM, 2025, Fig. 1). This reflects a growing trend of digitalization, especially in startups focused on e-commerce, social media marketing, and online service delivery.

However, despite the availability of technology, the report highlights a **significant gap in AI awareness and perceived importance**. In **73% of the surveyed economies**, fewer than one-third of early-stage entrepreneurs consider AI to be "very important" for their business in the next three years

(GEM, 2025, Fig. 2). This lack of awareness is particularly evident in low- and middle-income economies, including student-led ventures, where access to technical education and institutional support remains limited.

This creates a **paradox of digital accessibility**: on the one hand, technology reduces barriers to entry into entrepreneurship; on the other, its complexity, rapid evolution, and lack of tailored training for students make it difficult to fully leverage these opportunities. This is especially true for non-technical disciplines, where entrepreneurship and digital tools are often taught inconsistently or not at all.

Another growing challenge is **digital overload**. Student entrepreneurs must navigate a fragmented ecosystem of platforms, advertising tools, and algorithmic competition — requiring not only flexibility, but also psychological resilience. This highlights the urgent need for **mentorship**, **interdisciplinary digital literacy education**, and the creation of **safe spaces** to experiment with AI and digital entrepreneurship.

To reduce the digital divide and promote student entrepreneurship, the following actions are recommended:

- Integrate **adaptive learning platforms** and **micro-credentials** in AI, marketing, and digital management;
- Establish **on-campus digital incubators** supported by peer mentors and AI platforms;
- Promote **ethical AI use and data protection** education;
- Expand access to **open educational resources (OERs)** and partnerships with EdTech platforms.

Growth Illusions: When Entrepreneurial Expectations Don't Match Reality

The **GEM Global Report 2024/2025** reveals a striking trend: while many countries show a steady increase in the number of early-stage entrepreneurs—particularly among youth and university graduates—these encouraging figures often conceal a more complex reality in which entrepreneurial expectations do not align with actual outcomes and conditions.

In 42 out of 51 economies surveyed, young people (aged 18–34) are more likely to start a new business than older individuals (aged 35–64). In countries like Latvia and Germany, young entrepreneurs are **twice as active** as their older peers (GEM, 2024/2025). This demonstrates the high entrepreneurial potential of youth, but also raises the question: *how realistic are their expectations regarding business growth and sustainability?*

Education level plays a significant role as well. In the vast majority of countries, individuals with higher education degrees are more active in starting businesses than those without. For example, in India, Thailand, and Argentina, the share of graduates launching new ventures is **twice as high** as that of non-graduates (GEM, 2024/2025). However, the mere act of starting a business does not necessarily indicate long-term viability or growth potential.

One of the most revealing parts of the report concerns job creation expectations. Despite the increase in new business formation, **more than one-third of early-stage entrepreneurs in 37 economies** reported that they do **not plan to hire any employees** within the next five years. This may indicate either limited business models or low growth ambition. Notably, these pessimistic projections are most common in high-income countries such as Germany, Sweden, Israel, and Spain (GEM, 2024/2025). This highlights a gap between perceived opportunity and actual readiness for business expansion.

A similar pattern is observed in the field of innovation. Although 28 economies report that **more than 30%** of new entrepreneurs are introducing products or services that are "new to their region," truly **globally unique innovations remain rare**. Only four countries—Taiwan, Norway, Italy, and Cyprus—report that **over 10%** of new entrepreneurs have created something entirely new to the world (GEM, 2024/2025). This underscores the **illusory nature of perceived innovativeness** in a large portion of new ventures.

Taken together, the GEM data point to a critical mismatch between **entrepreneurial optimism and the reality of business development**. Young people, women, and graduates may be eager to launch their own ventures, but they often struggle to scale them or achieve high-impact innovation. This contradiction is further intensified by the **growing fear of failure**: despite increasingly favorable conditions for starting a business, **43 out of 51 economies** report that a rising share of people refrain from entrepreneurship due to fear of failure (GEM, 2024/2025).

To bridge the gap between **perception and reality**, structural interventions are needed: **access to finance**, **mentorship**, **flexible regulatory frameworks**, and **targeted support for women and youth**. Without systemic change, the ambitions of aspiring entrepreneurs may remain just that—ambitions, never fully realized.

4. IMPLICATIONS FOR EDUCATORS AND POLICYMAKERS

To better support student entrepreneurs, we must move beyond generic training modules and address the lived experiences of risk, identity, and support. Human-centered design approaches in curriculum development can help create more inclusive and responsive learning environments (Zhu & Zhang, 2022).

Key recommendations include:

– Embedding entrepreneurship narratives that reflect diverse paths and backgrounds;

– Creating non-competitive spaces where students can explore ideas safely;

– Increasing access to peer mentors who recently navigated similar journeys;

– Providing mental health support alongside business coaching;

To reduce deterrents to entrepreneurship, universities should:

– Establish cross-disciplinary incubators with AI-

enabled mentorship systems;

– Promote narrative-based learning to normalize failure as a developmental process;

– Develop targeted micro-credentials in legal, digital, and funding literacy;

– Engage families and communities through outreach that de-stigmatizes entrepreneurship.

Policy Recommendations

This section offers practical recommendations for universities and policymakers aimed at addressing the barriers hindering student entrepreneurship. Grounded in the study's findings, these recommendations emphasize the need for a holistic approach that goes beyond financial support to include psychological assistance, mentorship development, and enhancement of digital literacy.

Particular attention is given to fostering an inclusive and supportive environment where students can safely test their ideas and learn from failure. It also advocates for involving families and communities to shift cultural attitudes and improve the social acceptance of entrepreneurship.

Furthermore, the importance of integrating emerging technologies and AI is highlighted, with a focus on ethical use and developing the skills necessary for successful entrepreneurship in the digital age.

Based on the findings of this study, the following policy measures are recommended to foster a more inclusive and enabling environment for student entrepreneurship:

1. Integrate Entrepreneurship Across Disciplines

Entrepreneurial thinking should not be confined to business schools. Policymakers and university leaders should embed entrepreneurship education across all academic fields - particularly in STEM, social sciences, and the humanities - using interdisciplinary challenges and problem - based learning to cultivate real-world relevance;

2. Provide Early, Low-Stakes Entrepreneurial Experiences

Universities should offer early-stage, low-risk programs such as idea labs, pitch contests, and simulated ventures. These initiatives allow students to explore entrepreneurship without the fear of failure or financial loss, helping build confidence and entrepreneurial identity;

3. Reform Access to Micro-Financing and Seed Grants

Educational institutions and government innovation funds should expand access to micro-grants, targeted subsidies, and pre-seed capital for student-led projects. These funds should have simplified application procedures to lower bureaucratic thresholds for first-time entrepreneurs;

4. Develop Peer Mentorship and Alumni Networks

Create formal structures that connect students with entrepreneurial alumni, local founders, and near-peer mentors. Social proximity to successful role models can reduce psychological barriers and demystify the entrepreneurial path;

5. Train Faculty to Support Entrepreneurial Development

Many instructors lack the tools or incentives to nurture entrepreneurial capacities. Faculty development programs should include training on how to encourage opportunity recognition, creative problem-solving, and tolerance for ambiguity among students;

6. Include Families and Communities in Entrepreneurial Outreach

Given the influence of family expectations, outreach programs should include information sessions and communication strategies aimed at families, especially in cultural contexts where entrepreneurship is not seen as a viable career;

7. Measure and Address Psychological Barriers

Policymakers should fund research and initiatives that treat fear of failure, imposter syndrome, and risk aversion as central barriers. This includes offering coaching, resilience training, and mental health support specific to entrepreneurial challenges;

8. Establish Local Ecosystem Partnerships

Governments and universities should foster strong partnerships with local incubators, SMEs, and innovation hubs, allowing students to gain exposure to real entrepreneurial environments and to bridge academia with practice.

Discussion

The discussion section interprets the findings within the context of existing theories and practices in entrepreneurship education. It emphasizes how the identified barriers interact and influence one another, and how digital transformation is reshaping traditional approaches to supporting student entrepreneurship.

The importance of the human factor, psychological support, and creating a safe educational environment-where entrepreneurial experiments are seen as a learning process rather than failure risk-is highlighted. The section also addresses limitations of current programs and proposes avenues for improvement.

5. CONCLUSION

The findings section presents key insights from the data and literature analysis, structured according to the proposed multi-level barrier model. It details the primary obstacles within each of the five categories: resource constraints, cognitive-emotional barriers, capability gaps, institutional frictions, and socio-normative pressures.

This section also discusses the intersections and mutual influences among these categories, as well as the impact of digital technologies and AI on the perception and overcoming of barriers. The findings are supported by statistical data from GEM reports and references to studies, providing empirical grounding.

This study reaffirms that while student interest in entrepreneurship is growing, multiple intersecting barriers continue to inhibit entrepreneurial action. Among these, financial limitations remain the most frequently cited, reflecting a persistent perception of entrepreneurship as a resource-intensive endeavor. However, psychological and educational barriers—such as fear of failure and uncertainty

about where to begin—are often underestimated in institutional approaches.

Our findings suggest that many of these obstacles are not merely external or structural, but deeply rooted in personal confidence, social expectations, and access to supportive ecosystems. Notably, students often interpret lack of funding as an immutable barrier, while a lack of knowledge is seen as solvable-highlighting an opportunity for targeted educational interventions.

From a policy and practice perspective, universities play a pivotal role in reshaping the narrative around entrepreneurship. By embedding entrepreneurial thinking across curricula, increasing visibility of success stories, and creating psychologically safe spaces for experimentation and failure, higher education institutions can reduce perceived risk and build entrepreneurial resilience.

Furthermore, cultural and familial influences cannot be overlooked. Entrepreneurship education must also address these softer dimensions-challenging societal norms and fostering intergenerational dialogue to shift perceptions of entrepreneurship from a risky deviation to a legitimate, even desirable, career path.

In sum, enabling student entrepreneurship requires more than funding and business training. It demands a human-centered, context-aware approach that integrates psychological, educational, social, and cultural dimensions. Future research should continue exploring how to design inclusive and empowering ecosystems that activate latent entrepreneurial motivation and unlock diverse entrepreneurial journeys.

In this article, the following conclusion can be drawn: despite the growing interest of students in entrepreneurship, numerous interconnected barriers continue to limit their active engagement. Financial constraints remain one of the main obstacles, yet psychological and educational aspects are often underestimated in institutional approaches.

Many of these barriers are not only objective but also subjective, closely linked to personal confidence, social expectations, and insufficient support from ecosystems. Therefore, a comprehensive, human-centered approach that considers emotional, cultural, and social factors is necessary.

Ultimately, universities and policymakers play a key role in creating conditions that help students unlock their entrepreneurial potential and develop sustainable entrepreneurial practices.

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