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UNIVERSITY INCUBATORS AND YOUTH ENTREPRENEURSHIP DEVELOPMENT: EMPIRICAL EVIDENCE FROM A PERUVIAN UNIVERSITY

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Abstract
This study analyzes the influence of business incubators on university entrepreneurship within a higher education institution located in northern Peru. Through a quantitative, non-experimental, correlational, and cross-sectional approach, a validated and highly reliable instrument ($\alpha > 0.96$) was applied to a sample of university students. Given the non-normal distribution of the data, Spearman's rank correlation coefficient was used, revealing statistically significant relationships between business incubators and three key dimensions of entrepreneurship: affective-behavioral ($r = 0.512$), entrepreneurial intention ($r = 0.613$), and institutional context ($r = 0.602$). These findings indicate that incubators not only provide technical support but also serve as formative environments crucial for the development of entrepreneurial skills. It is concluded that their structural integration into universities contributes to the strengthening of innovation ecosystems, sustainability, and regional economic development.

Keywords: business incubators, university entrepreneurship, entrepreneurial intention, higher education, innovation ecosystems.

INTRODUCTION

This article is highly relevant as it addresses the critical role played by business incubators in promoting university entrepreneurship, a topic of growing interest worldwide. Business incubators emerged in the 1950s in Silicon Valley, specifically at Stanford University, as a response to the drive for innovation and technological development (Galbraith et al., 2021). Since then, their evolution has been significant, to the extent that their number and diversity

have increased notably in recent years, attracting the interest of researchers and public policy makers (Klofsten & Bienkowska, 2021).

The importance of these incubators lies in their strategic function: to identify business ideas with potential and support their development until they are ready to compete in the market (Wang et al., 2020). In the university context, this role acquires even greater value, as it channels students' creativity and capabilities into concrete entrepreneurial initiatives. In this sense, incubators become key actors within the entrepreneurial ecosystem, by facilitating resources, mentorship, and contact networks that enhance the viability of projects (Lamine et al., 2018).

At the international level, various associations have actively promoted the development of business incubators as strategic mechanisms for fostering entrepreneurship. One of the most representative has been the National Business Incubation Association (NBIA, 2020), recognized as a leading organization in the field, with over 900 affiliated incubators in the United States and 40 branches in other countries. In the European context, the European Business and Innovation Centre Network (EBN | Red de Innovación, 2022) stands out, a non-profit organization comprising 160 operational members in 35 countries, articulating efforts in innovation, technology transfer, and regional development. In Peru, institutional coordination has been established through the Asociación Peruana de Incubadoras de Empresas sin fines de lucro (PERUINCUBA, 2022), which brought together 18 national institutions, though still in an early phase of consolidation.

Within this framework, the Peruvian government has promoted public policies aimed at strengthening research and innovation for the creation of new high-growth-potential companies, particularly through the PROINNOVATE program of the Ministry of Production (PRODUCE, 2022). However, a critical gap persists: despite the fact that University Law No. 30220 includes the linkage between universities and business incubators, students have not been actively incorporated into these incubation processes. This contrast becomes evident when observing international experiences, such as the case of IncubaUdeC (2022) in Chile, where universities do integrate students as key actors in the formulation and execution of entrepreneurial projects. This difference highlights the need to review university governance models and to strengthen the links between academic training and business incubation initiatives in the Peruvian context.

Despite the increasing scholarly interest in business incubators and entrepreneurship education, current literature remains heavily concentrated on mature ecosystems in developed economies, particularly in North America, Europe, and East Asia. Few studies have examined how incubators operate within under-resourced, emerging university systems, especially in Latin America, where institutional structures, funding models, and entrepreneurial cultures differ substantially. In the case of Peru, existing research is often fragmented, predominantly descriptive, and lacks empirical depth or statistical validation. Little is known about the specific mechanisms through which university incubators influence students' entrepreneurial behavior and intention in settings characterized by limited institutional support and systemic inequalities. This gap underscores the need for context-sensitive, data-driven analyses that explore not only the presence of incubators but also their structural integration and pedagogical roles within higher education institutions in emerging regions.

At the global level, entrepreneurship has been recognized as a fundamental driver of economic growth, contributing significantly to sustainable development, job creation, and global competitiveness (Bahl et al., 2021; Malerba & McKelvey, 2020; Gu & Wang, 2022). Therefore, it has attracted increasing interest from researchers, policy makers, and higher

education leaders. According to Jiang & Fu (2022) and Tunali & Sener (2019), dynamic entrepreneurship not only drives organizational innovation but also closely interacts with the institutional environment, which exerts important regulatory effects that can either facilitate or restrict entrepreneurial development in various national contexts.

In this process, the entrepreneur plays a central role by identifying market opportunities, generating added value, and ultimately assuming the inherent risk of economic activity (Pacheco-Ruiz et al., 2022; Junaid et al., 2022; Oliva et al., 2022; Gieure et al., 2020). However, beyond technical competencies, the emotional component also plays a critical role: entrepreneurial passion, defined as a strong internal desire to create and sustain a business, enables entrepreneurs to overcome obstacles, maintain motivation, and persevere amid market uncertainty (Cardon et al., 2009, as cited in Adomako & Ahsan, 2022). In this context, universities have assumed an active role as catalysts of entrepreneurship. They not only provide knowledge and skills, but also develop entrepreneurial ecosystems that stimulate creativity, critical thinking, and business action. As highlighted by Ahmed et al. (2020), these institutions promote a strong commitment to the comprehensive training of students, encouraging desirable entrepreneurial behaviors through support policies, business incubators, and collaborative networks.

Escobar et al. (2022) questioned whether business incubators, as entrepreneurship support organizations, play a decisive role in the survival of start-ups. Building on this perspective, Kallas and Parts (2021) found that engagement in entrepreneurship varied by age and gender across different stages of business development: younger individuals, particularly men, were more active in the early stages; middle-aged managers were less engaged; and in the final stage, older adults were more likely to initiate ventures, while young people without education remained largely uninvolved.

Valencia-Arias et al. (2021) sought to confirm the relationship between entrepreneurial attitudes, the university environment, entrepreneurial culture, and training, identifying key elements that could foster entrepreneurship among university students. Expanding on this idea, Pacheco-Ruiz et al. (2022) argued that the more rapidly entrepreneurship processes are developed within universities, the greater the opportunities for students and future professionals to launch successful ventures. Similarly, Renart et al. (2022) noted that many universities have begun integrating innovative educational strategies into their curricula to enhance students' entrepreneurial intentions and capabilities.

Meanwhile, Hausberg and Korreck (2020), through a co-citation analysis, identified seven major research clusters related to incubators: (1) business incubation, (2) science parks and university incubators, (3) social capital and knowledge-based perspectives on incubators, (4) technology-based start-ups and science parks, (5) technopolis, (6) evaluation, and (7) incubatee survival and failure.

In recent years, business incubators have emerged as strategic tools for fostering entrepreneurship, particularly in educational and emerging economic contexts. According to Anjum et al. (2024), the implementation of entrepreneurship education programs and the integration of business incubation centers significantly impact entrepreneurial intentions by mediating cognitive factors linked to the Theory of Planned Behavior. This evidence is supported by Bernardus et al. (2024), who emphasize that incubators, in conjunction with strong networks and well-structured government policies, strengthen entrepreneurial ecosystems, increasing the sustainability of start-ups in developing economies. Budac and Ilie (2024) also highlight that academic incubators play a decisive role in linking university research with market innovation, promoting an entrepreneurial culture through inter-institutional collaboration.

In the African context, Iwu et al. (2024) argue that incubators can increase the sustainability of family businesses by strengthening networks and knowledge transfer, especially in succession processes. Complementarily, Dhiman and Arora (2025) identify that incubators should adapt to specific sectors to maximize their impact on SMEs, emphasizing the need for differentiated approaches. In this context, Hassan (2024) suggests that university incubators represent a functional evolution that enables universities to fulfill a "third mission" related to economic and social development. Similarly, Sutrisno et al. (2024) indicate that these structures positively impact youth employability by improving their skills through mentoring, practical training, and access to professional networks.

Furthermore, Salim et al. (2024) show that incubators not only serve as launch platforms, but also directly influence the shaping of entrepreneurial attitudes, a point also emphasized by Khraim (2024), who quantitatively demonstrates that dynamic marketing capabilities promoted through incubators improve start-up performance. Rukmana et al. (2024) conclude that vocational education incubators offer substantial opportunities, although they still face structural challenges such as funding and alignment with the productive sector, highlighting the need for integrated policies and multisectoral synergies to enhance their impact.

Despite the growing body of research on the role of business incubators in supporting entrepreneurship, most studies focus on well-established ecosystems in North America, Europe, and Asia, where institutional, economic, and educational conditions differ significantly from Latin American contexts (Han et al., 2022; Blank, 2021). In the specific case of Peru, studies on university incubators remain scarce and are mostly limited to normative descriptions or isolated case studies lacking a systematic empirical approach (Janqui, 2020; Pérez, 2019).

This gap underscores the need to generate local evidence to understand how business incubators influence the attitudes, contextual conditions, and entrepreneurial intentions of Peruvian university students. In particular, there is a lack of studies that evaluate this relationship using robust quantitative data and statistically validated models, which hinders the design of effective entrepreneurship promotion policies in higher education. Therefore, the present study seeks to fill this gap by empirically analyzing the influence of university incubators on student entrepreneurship at a university in Piura, Peru, contributing contextualized evidence to a field of study still emerging in Latin America. The research question is: What is the influence of the business incubator on entrepreneurship among students at a university in Piura in 2024? The general objective is to determine the influence of the business incubator on entrepreneurship among students at a university in Piura in 2024. The specific objectives are to determine the influence of the business incubator on the behavioral/affective aspect of entrepreneurship among students at a university in Piura in 2024, to determine the influence of the business incubator on the contextual conditions of entrepreneurship at a university in Piura in 2024, and to determine the influence of the business incubator on the entrepreneurial intention of students at a university in Piura in 2024. The general hypothesis is that there is an influence of the business incubator on entrepreneurship among students at a university in Piura in 2024. The specific hypotheses are: there is an influence of the business incubator on the behavioral/affective aspect of entrepreneurship among students at a university in Piura in 2024, there is an influence of the business incubator on the contextual conditions of entrepreneurship at a university in Piura in 2024, and there is an influence of the business incubator on the entrepreneurial intention of students at a university in Piura in 2024.

THEORETICAL FRAMEWORK

University entrepreneurship has been approached from multiple angles, with training, institutional culture, and support resources standing out as key determinants. Valencia-Arias et al. (2022) and Lechuga et al. (2021) agree that training and the university cultural environment directly influence entrepreneurial attitude, a relationship also validated by Jena (2020) through the Theory of Planned Behavior (TPB). Engidaw (2021) reinforces this perspective by identifying how sociocultural differences impact entrepreneurial knowledge and attitude. Within this framework, Blank (2021) shows that the founding team's previous experience, combined with mentoring programs, determines the survival prospects of incubated startups.

Business incubators represent another central axis. Han et al. (2022) address the gap in the literature regarding governance of the relationships between incubators and startups, while Escobar et al. (2022) highlight the decisive role of these institutions in startup sustainability during the pandemic ($p < 0.01$, $R^2 = 0.32$). These conclusions align with the findings of Blank (2021), who demonstrates how the resources provided by incubators, such as mentoring or networking, amplify the effects of the entrepreneurial team's prior capabilities. In all cases, institutional structural support acts as a catalyst for emerging entrepreneurial potential.

On the other hand, individual motivations also play a key role. Fong et al. (2022) reveal that narcissistic personality influences entrepreneurial intention, mediated by self-efficacy. This dynamic is complemented by the findings of Ndofirepi (2020), who identifies the need for achievement and risk propensity as critical factors. Amofah & Saladrigues (2022) confirm the effect of attitude toward entrepreneurial education, with no gender differences, while Amofah et al. (2020) contribute from a quantitative perspective by analyzing MBA programs in Ghana, highlighting locus of control and environmental support as predictors. Together, these studies reflect how the interaction between personal, institutional, and cultural factors shapes a complex and multifaceted entrepreneurial ecosystem.

Business incubators have emerged as key agents in the development of new ventures by acting as mediators between entrepreneurs and business ecosystems. According to Oswaldo et al. (2019), based on the definition by NBIA (2020), incubators fulfill strategic functions structured around four components: organization, infrastructure, human talent, and incubation processes. Their organizational structure must be clearly defined, with strategic objectives focused on fostering the creation and consolidation of businesses, assessing market opportunities and limitations, and generating tangible results. Infrastructure, particularly in the university environment, should include functional spaces, laboratories, testing zones, and specialized equipment that facilitate technological innovation. Meanwhile, human resources—especially managers and mentors—play a fundamental role in transferring practical knowledge and connecting entrepreneurs with key networks (Bustos, 2007, as cited in Vázquez et al., 2019).

The incubation process involves defined phases: pre-incubation, incubation, and post-incubation (Piquer, 2002, as cited in Vázquez et al., 2019). In the pre-incubation phase, entrepreneurs receive support in drafting business plans and initial training. During incubation, projects are executed with technical assistance, product validation, and initial sales. Finally, post-incubation consolidates commercial operations. The duration of these processes may vary but generally ranges between two and four years (Jiménez, 2006, as cited in Vázquez et al., 2019). Additionally, university incubators play a pedagogical role: they strengthen students' entrepreneurial capabilities and allow them to channel ideas into productive projects that benefit their communities.

From an epistemological perspective, Janqui (2020) points out that research on incubators must address both quantitative approaches, which measure magnitudes, and qualitative approaches, which interpret the underlying meanings in their internal and external structures. Pérez (2019), drawing on North (1990), highlights that entrepreneurial action responds to an institutional framework that enables continuous organizational renewal in response to change. Along these lines, Souza et al. (2016) structure entrepreneurial behavior into three dimensions: affective, contextual, and intentional. The first refers to individual traits, the second to external factors such as public policy or the economic context, and the third to the intention to undertake, influenced by variables such as age, gender, experience, or access to capital. Together, these approaches offer a comprehensive view of entrepreneurship and the catalytic role of incubators in its development.

METHOD

The present research is basic in nature and adopts a quantitative approach, aimed at analyzing the relationship between the business incubator (independent variable) and student entrepreneurship (dependent variable). A non-experimental, cross-sectional, and correlational design was employed, as the variables were not manipulated and the data were collected at a single point in time.

The study was conducted in 2024 at the National University of Piura, with the target population comprising undergraduate students from the Faculties of Engineering, Economic Sciences, Social Sciences, and Education, totaling 1,500 enrolled students. From this population, a sample of 389 students was selected using simple random probability sampling, with a confidence level of 95% and a margin of error of 4.28%. The sample consisted of 56% women and 44% men, mostly between the ages of 18 and 25.

This study focused on a single public university in northern Peru, selected as a case of analytical and contextual representativeness rather than statistical generalizability. The National University of Piura was chosen due to its early-stage efforts to integrate business incubators into its academic ecosystem and its active participation in national innovation programs such as PROINNOVATE. As such, it represents an emerging institutional context where entrepreneurial initiatives are being developed in a nascent yet structured manner. This selection allows for a deeper exploration of the dynamics between incubator structures and student entrepreneurial behavior within a real-world educational setting. While this choice limits the external generalizability of the findings, it provides a detailed case-based understanding relevant for similar institutions in Latin American regions facing comparable structural and institutional conditions.

Data were collected using a structured five-point Likert scale questionnaire, which was validated through expert judgment (three academic evaluators) and subjected to reliability analysis. Cronbach's Alpha coefficients of 0.967 for the business incubator variable and 0.968 for the student entrepreneurship variable were obtained, indicating high internal consistency. Additionally, semi-structured interviews—both in-person and virtual via Zoom—were conducted to deepen the interpretation of the quantitative findings and gain a broader understanding of the studied phenomenon.

The study variables were operationalized into specific dimensions and indicators, categorized on an ordinal measurement scale. Data processing and statistical analysis were carried out using IBM SPSS version 26 software, applying descriptive statistics (frequencies, percentages) and inferential statistics, particularly the Spearman correlation test, since the results of the Kolmogorov–Smirnov test indicated non-normality in the data.

From an ethical standpoint, the research adhered to principles of confidentiality, informed consent, scientific integrity, and transparency, ensuring participants' anonymity and the

responsible handling of information, in accordance with ethical guidelines for studies involving human participants.

Table 1
Variables and Dimensions Analyzed in the Present Research

Variable	Dimensions	Indicators
Business incubators	Organization	Development and projection
	Infrastructure	Equipment
	Human talent	Advisory support
	Incubation	Pre-incubation, incubation, post-incubation
Entrepreneurship	Contextual	Interest in creating a business, desire to start a business
	Behavioral/affective	Family factor, family importance
	Intention	Initiative, decision

RESULTS

General objective: To determine the influence of the business incubator on entrepreneurship among students at a university in Piura, 2024.

Table 2
*Cross-tabulation: Business Incubator * Entrepreneurship among students at a university in Piura, 2024.*

		Entrepreneurship										Total	%
		Very Low	%	Low		Moderate	%	High	%	Very High	%		
Business incubator	Very Low	7	1,8%	2	0,5%	0	0,0%	0	0,0%	0	0,0%	9	2,3%
	Low	0	0,0%	4	1,0%	3	0,8%	2	0,5%	2	0,5%	11	2,8%
	Moderate	0	0,0%	0	0,0%	13	3,3%	13	3,3%	4	1,0%	30	7,7%
	High	0	0,0%	0	0,0%	2	0,5%	155	39,8%	106	27,2%	263	67,6%
	Very High	0	0,0%	0	0,0%	0	0,0%	8	2,1%	68	17,5%	76	19,5%
Total		7	1,8%	6	1,5%	18	4,6%	178	45,8%	180	46,3%	389	100,0%

The cross-tabulation in Table 2 reveals a clear pattern of association between the business incubator variable and the overall level of student entrepreneurship. Specifically, 39.8% of

the respondents were located in the "High" level for both variables. Additionally, the Business Incubator showed a high percentage in the "High" category, reaching a total of 67.6%, while the Entrepreneurship variable achieved its highest score in the "Very High" category with 45.8% of the total.

Objetivo específico 1: To determine the influence of the business incubator on the behavioral/affective aspect of entrepreneurship in students from a University of Piura, 2024.

Table 3

*Cross-Tabulation: Business Incubator * Levels of the Behavioral/Affective Dimension of Entrepreneurship in Students at a University of Piura 2024*

		Conductual										Total	%
		Very Low	%	Low	%	Moderate	%	High	%	Very High	%		
Business incubator	Very Low	9	2,3%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	9	2,3%
	Low	0	0,0%	2	0,5%	5	1,3%	4	1,0%	0	0,0%	11	2,8%
	Moderate	0	0,0%	2	0,5%	9	2,3%	15	3,9%	4	1,0%	30	7,7%
	High	0	0,0%	0	0,0%	5	1,3%	182	46,8%	76	19,5%	263	67,6%
	Very High	0	0,0%	0	0,0%	0	0,0%	21	5,4%	55	14,1%	76	19,5%
Total		9	2,3%	4	1,0%	19	4,9%	222	57,1%	135	34,7%	389	100,0%

As shown in Table 3, the distribution of responses indicates a notable alignment between the business incubator and the behavioral/affective dimension of entrepreneurship. A total of 46.8% of respondents were in the "High" level for both variables. Furthermore, the Business Incubator registered a high percentage in the "High" level, reaching 67.6% of the total. The behavioral/affective dimension of Entrepreneurship also recorded its highest frequency in the "High" level with 57.1% of the total responses.

Objetivo específico 2: To determine the influence of the business incubator on the contextual condition of entrepreneurship at a University of Piura, 2024.

Table 4

*Cross-Tabulation: Business Incubator * Levels of the Contextual Dimension of Entrepreneurship in Students at a University of Piura 2024*

		Contextual										Total	%
		Very Low	%	Low	%	Moderate	%	High	%	Very High	%		
Business incubator	Very Low	9	2,3%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	9	2,3%
	Low	0	0,0%	4	1,0%	5	1,3%	0	0,0%	2	0,5%	11	2,8%

	Moderate	0	0,0%	0	0,0%	11	2,8%	17	4,4%	2	0,5%	30	7,7%
	High	0	0,0%	0	0,0%	2	0,5%	182	46,8%	79	20,3%	263	67,6%
	Very High	0	0,0%	0	0,0%	0	0,0%	13	3,3%	63	16,2%	76	19,5%
Total		9	2,3%	4	1,0%	18	4,6%	212	54,5%	146	37,5%	389	100,0%

Table 4 presents compelling evidence of a positive relationship between the incubator and the contextual conditions supporting student entrepreneurship. A total of 46.8% of students were classified at the "High" level for both variables. In addition, the Business Incubator obtained a high overall percentage in the "High" level with 67.6%, while the contextual dimension of Entrepreneurship recorded its highest result also in the "High" category with 54.5% of the total.

Objetivo específico 3: To determine the influence of the business incubator on the entrepreneurial intention of students from a University of Piura, 2024.

Table 5

*Cross-Tabulation: Business Incubator * Levels of the Entrepreneurial Intention Dimension of Students at a University of Piura 2024*

		Intención										Total	%
		Very Low	%	Low	%	Moderate	%	High	%	Very High	%		
Business incubator	Very Low	7	1,8%	0	0,0%	2	0,5%	0	0,0%	0	0,0%	9	2,3%
	Low	0	0,0%	4	1,0%	0	0,0%	5	1,3%	2	0,5%	11	2,8%
	Moderate	0	0,0%	0	0,0%	11	2,8%	17	4,4%	2	0,5%	30	7,7%
	High	0	0,0%	0	0,0%	6	1,5%	169	43,4%	88	22,6%	263	67,6%
	Very High	0	0,0%	0	0,0%	0	0,0%	8	2,1%	68	17,5%	76	19,5%
Total		7	1,8%	4	1,0%	19	4,9%	199	51,2%	160	41,1%	389	100,0%

Table 5 illustrates that entrepreneurial intention scores tend to increase with higher engagement in incubator-related activities. Specifically, 43.4% of the participants were placed at the "High" level for both variables. The Business Incubator registered 67.6% in the "High" level, while the entrepreneurial intention dimension reached its highest percentage also in the "High" level with 51.2% of the total.

Hypothesis Testing

Table 6
Kolmogorov–Smirnov Normality Test

	Kolmogorov-Smirnov[a]		
	Statistic	**n**	**P**
Entrepreneurship	0.264	389	0.000
Contextual Dimension	0.301	389	0.000
Behavioral Dimension	0.312	389	0.000
Intention Dimension	0.276	389	0.000
Business Incubator	0.375	389	0.000

Nota: Own elaboration, results obtained using IBM SPSS software version 26
a. Lilliefors significance correction

The results in Table 6 confirm that none of the variables follow a normal distribution, as all p-values are below the 0.05 threshold. The results showed that the significance level for all variables was below 0.05, indicating that the data do not follow a normal distribution. Consequently, the Spearman's Rho correlation test was applied to validate the research hypotheses.

H There is an influence of the business incubator on entrepreneurship in students from a University of Piura, 2024.

Table 7
Correlations Between Business Incubator and Entrepreneurship in Students at a University of Piura 2024.

			Business incubators	**Entrepreneurship**
Spearman's Rho	**Business incubators**	**Rho**	1	0.627**
		p	0.000	0.000
		n	389	389
	Entrepreneurship	**Rho**	0.627**	1
		p	0.000	0.000
		n	389	389

**. Correlation is significant at the 0.01 level (2-tailed)

Table 7 displays a strong, statistically significant correlation between business incubator participation and the overall entrepreneurship variable. The Spearman's Rho correlation coefficient was 0.627, indicating a strong and direct linear relationship between Business

Incubators and Entrepreneurship among students at a University of Piura in 2024. The significance value (p = 0.000) was less than 0.05, thus confirming the acceptance of the general hypothesis.

H1 There is an influence of the business incubator on the behavioral/affective aspect of entrepreneurship in students from a University of Piura, 2024.

Table 8

Correlations Between Business Incubator and the Behavioral/Affective Dimension of Entrepreneurship in Students at a University of Piura 2024.

			Business incubators	**Dimensión Conductual**
Spearman's Rho	**Business incubators**	**Rho**	1	0.512**
		p	0.000	0.000
		n	389	389
	Behavioral Dimension	**Rho**	0.512**	1
		p	0.000	0.000
		n	389	389

Nota: Own elaboration, results obtained using IBM SPSS software version 26

**. Correlation is significant at the 0.01 level (2-tailed)

As indicated in Table 8, the business incubator demonstrates a moderate yet significant correlation with the behavioral/affective aspect of entrepreneurship. The Spearman's Rho test showed a bilateral correlation coefficient of 0.512, which corresponds to a moderate and direct linear relationship between the Business Incubator and the behavioral/affective dimension of Entrepreneurship. With a significance value of p = 0.000 (less than 0.05), the hypothesis was accepted.

H2 There is an influence of the business incubator on the contextual condition of entrepreneurship at a University of Piura, 2024.

Table 9

Correlations Between Business Incubator and the Contextual Dimension of Entrepreneurship in Students at a University of Piura 2024.

			Business incubators	**Dimensión Contextual**
Spearman's Rho	**Business incubators**	**Rho**	1	0.602**
		p	0.000	0.000
		n	389	389
	Contextual Dimension	**Rho**	0.602**	1
		p	0.000	0.000
		n	389	389

Nota: Own elaboration, results obtained using IBM SPSS software version 26

**. Correlation is significant at the 0.01 level (2-tailed)

In Table 9, a substantial correlation is observed between the incubator variable and contextual factors related to entrepreneurship. The Spearman's Rho test yielded a correlation

coefficient of 0.602, demonstrating a strong and direct linear relationship between the Business Incubator and the contextual dimension of Entrepreneurship. The p-value (0.000) being lower than 0.05 validates the acceptance of the related hypothesis.

H3 There is an influence of the business incubator on the entrepreneurial intention of students from a University of Piura, 2024.

Table 10

Correlations Between Business Incubator and the Entrepreneurial Intention Dimension of Students at a University of Piura 2024.

			Business incubators	**Entrepreneurial Intention**
Spearman's Rho	**Business incubators**	**Rho**	1	0.613**
		p	0.000	0.000
		n	389	389
	Entrepreneurial Intention	**Rho**	0.613**	1
		p	0.000	0.000
		n	389	389

Nota: Own elaboration, results obtained using IBM SPSS software version 26

**. Correlation is significant at the 0.01 level (2-tailed)

Table 10 shows a high and statistically significant correlation between participation in business incubators and students' entrepreneurial intention. The Spearman's Rho correlation coefficient was 0.613, indicating a strong and direct linear relationship between the Business Incubator and the entrepreneurial intention dimension of students at a University of Piura in 2024. With a p-value of 0.000 (below 0.05), the hypothesis was accepted.

DISCUSSION

This study provides robust empirical evidence that university business incubators exert a statistically significant and multidimensional influence on the development of student entrepreneurship. The use of a highly reliable instrument (Cronbach's alpha > 0.96) and the application of Spearman's Rho—necessitated by the non-normality of the data—ensure methodological rigor and validate the consistency of the findings. The confirmed correlation between incubator engagement and overall entrepreneurial development ($r = 0.627$, $p < 0.001$) aligns with international research by Escobar et al. (2022) and Anjum et al. (2024), reinforcing the notion that incubators are not merely logistical support units but active catalysts of entrepreneurial behavior and cognitive development.

The high reliability of the instrument ($\alpha > 0.96$) and the application of Spearman's correlation coefficient—justified by the non-normality of the data—confirm the methodological robustness of the quantitative analysis. These results offer empirical insights into how business incubators influence multiple dimensions of student entrepreneurship within the educational setting of northern Peru.

Beyond technical support, incubators appear to shape affective and motivational domains. The moderate correlation between incubators and the affective-behavioral dimension ($r = 0.512$) substantiates the claim that incubation environments foster internal entrepreneurial traits such as self-efficacy, autonomy, and persistence. These findings are congruent with

the work of Ndofirepi (2020) and Budac and Ilie (2024), who underscore the transformative potential of entrepreneurship education in fostering proactive mindsets. This affective dimension is particularly relevant in under-resourced contexts, where internal psychological drivers may compensate for limited structural support.

With respect to entrepreneurial intention ($r = 0.613$, $p < 0.001$), the findings confirm that incubators serve as strategic learning ecosystems that stimulate student engagement through real-world projects, mentorship, and experiential learning. This supports previous findings by Han et al. (2022) and Salim et al. (2024), and aligns with theories of planned behavior where intention precedes action. The influence of incubators on intention also confirms the role of academic institutions in shaping entrepreneurial identity, a process further supported by institutional climate and social norms, as discussed by Fong et al. (2022) and Jena (2020).

Moreover, the strong correlation observed with the contextual dimension ($r = 0.602$, $p < 0.001$) highlights the strategic positioning of incubators within innovation ecosystems. They act as mediators of access—to networks, public funding, training, and infrastructure—thereby amplifying students' capacity to materialize entrepreneurial ideas. These results echo the conclusions of Galindo-Martín et al. (2021) and Bernardus et al. (2024), who emphasize the incubator's integrative role in connecting educational institutions with economic systems. Importantly, these findings hold particular relevance in the Peruvian context, where the lack of systemic institutionalization of entrepreneurial programs often leaves students disconnected from innovation agendas. The relevance of territorial and sectoral alignment, as proposed by Dhiman and Arora (2025), is underscored in this case, where regional incubators could serve as engines of localized economic development.

Additionally, the study reaffirms the importance of mentorship and structured guidance as critical success factors in early-stage entrepreneurship. Findings corroborate Anjum et al. (2024) and Blank (2021), who argue that sustained engagement and access to experienced mentors enhance venture viability and resilience. In this light, university incubators must be reconceptualized as pedagogical spaces that integrate theoretical learning with entrepreneurial practice, supporting students in navigating uncertainty and iterative innovation processes. These environments not only increase employability and entrepreneurial capacity but also foster community-rooted innovation and knowledge transfer, as highlighted by Budac and Ilie (2024).

Methodologically, the study's design offers a reliable framework for analyzing the influence of incubators through statistically validated correlations. The use of mixed methods—complementing quantitative data with interviews—strengthens the internal validity and enhances the interpretative depth of the analysis. Although conducted within a single institutional context, the findings contribute to the scarce body of empirical evidence from Latin American university systems and offer valuable insights for similar underexplored regions. This case-based understanding reveals how incubators function as symbolic and structural infrastructures that promote entrepreneurship in environments marked by institutional limitations and socioeconomic asymmetries.

In sum, this research positions university incubators not only as auxiliary support structures but as core agents of educational transformation and regional innovation. Their influence extends from shaping individual entrepreneurial identity to fostering structural conditions

for sustainable venture creation, thus validating their inclusion in strategic academic and policy agendas for emerging economies.

Notably, one of the most striking and context-specific findings of this study is the relatively high correlation between incubator participation and entrepreneurial intention, even in the absence of robust institutional frameworks or sustained public investment in university innovation in Peru. This suggests that student entrepreneurship may be advancing more through individual agency and isolated institutional efforts than through systemic support. Unlike patterns reported in OECD countries, where incubators operate within structured innovation ecosystems, the Peruvian case reflects a fragmented and emerging environment in which university incubators serve as compensatory mechanisms for broader institutional and economic gaps. This underscores the dual role of incubators—not only as pedagogical tools, but also as structural correctives in under-resourced academic systems. As such, these findings reveal the need for coordinated policy interventions that align higher education, economic development strategies, and regional innovation agendas to sustain and scale entrepreneurial outcomes in similar contexts.

CONCLUSIONS

The findings obtained in this research confirm that business incubators exert a positive and statistically significant influence on university entrepreneurship, transcending their logistical role to become true formative and integrative spaces. Far from being merely support environments, incubators shape affective dimensions, strengthen entrepreneurial intention, and create favorable contexts for the development of sustainable initiatives, thereby validating their strategic value within both the educational and productive ecosystems. The observed correlation between the variables confirms that greater interaction with incubation processes increases students' predisposition to develop and consolidate business projects with real viability. The evidence also suggests that this influence is more effective when incubators are integrated with entrepreneurship training programs, mentoring networks, and institutional resources, generating synergies that impact both individual competencies and the student's broader social environment.

In this regard, university incubators should be recognized as key agents of transformation, innovation, and sustainability—especially in regions facing structural challenges in employment, economic development, and competitiveness. Their strengthening—through strategic funding, professionalization of their teams, and multisectoral linkages—represents a relevant strategy to energize youth entrepreneurship and enhance human capital through higher education.

Nonetheless, the study presents limitations that must be considered. The remote application of the instrument and the non-probabilistic sample design may have partially constrained the depth and representativeness of the results. Furthermore, the research is limited to a single university in northern Peru, which restricts the possibility of generalizing the findings to broader or more diverse institutional contexts.

For future research, it is recommended to conduct comparative studies between public and private universities, as well as longitudinal research that measures the sustained impact of incubation programs on the actual success of graduate ventures. It is also pertinent to explore the influence of sectoral, territorial, and gender-related factors on the effectiveness of incubation processes, incorporating mixed methodological approaches to broaden the comprehensive understanding of the phenomenon.

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