



## Systematic review of the influential aspects in digital entrepreneurship in the years 2019-2023

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### Abstract

The present study focuses on analyzing the impact of various factors on the development of digital entrepreneurship in Peru during the period 2019-2023. Through a systematic review of academic literature in databases such as Dialnet and Redalyc, topics such as digital marketing, economic growth, the gender gap and educational inclusion were explored. The results obtained reveal that the COVID-19 pandemic significantly accelerated the adoption of digital strategies in companies of all sizes, turning digital entrepreneurship into a key driver for economic growth at the national and international level. The importance of adaptation to new technologies, creativity, customer orientation and collaboration in strategic networks for the success of digital ventures in the Peruvian context is highlighted.

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### Introduction

#### Contextualization

Digital entrepreneurship has experienced exponential growth in recent years, especially between 2019 and 2023, driven by rapid technological evolution and changes in consumer habits (Kraus *et al.*, 2019) <sup>[9]</sup>. In Latin America, and specifically in Peru, this phenomenon has become an engine of innovation and economic development. Digital entrepreneurs in this region leverage digital tools and online platforms to create and scale their businesses, requiring both technical skills and soft competencies such as creativity and resilience (Nambisan, 2017; Sahut *et al.*, 2021) <sup>[15, 22]</sup>.

The COVID-19 pandemic further accelerated the growth of digital entrepreneurship, driving the migration of traditional companies towards online business models and generating new opportunities for digital native entrepreneurs (Shepherd, 2020) <sup>[24]</sup>. This paradigmatic change has generated a growing interest in identifying the factors that influence the success and sustainability of these ventures.

The digital entrepreneurship ecosystem is dynamic and covers various sectors, from e-commerce to digital health, characterized by the constant emergence of new disruptive technologies (Nambisan *et al.*, 2019) <sup>[16]</sup>. However, this ecosystem also faces challenges such as high competition, the need to adapt to emerging technologies, and concerns about data privacy and security (Sussan & Acs, 2017) <sup>[25]</sup>. Furthermore, inequalities in access to technology and digital education limit entrepreneurship opportunities in certain population groups (Graham, 2019) <sup>[6]</sup>.

Understanding the factors that influence the success of digital entrepreneurship is essential to foster a solid and sustainable entrepreneurial ecosystem. Access to capital, supportive government policies, digital skills education, and entrepreneurial culture are key elements that shape the digital entrepreneurship landscape (Giones & Brem, 2017) <sup>[5]</sup>.

### Gap identification

Despite growing interest in digital entrepreneurship, especially in recent years, significant gaps remain in understanding and support for this phenomenon. While the importance of digital skills and online platforms is recognized (Tiwari *et al.*, 2021) <sup>[26]</sup>, there is a lack of in-depth research on how these competencies develop in various socioeconomic and cultural contexts, especially in emerging economies (Reuschke & Mason, 2020) <sup>[19]</sup>.

Likewise, although the importance of innovation has been highlighted (Nambisan *et al.*, 2019) <sup>[16]</sup>, it is necessary to delve deeper into how emerging technologies, such as artificial intelligence and blockchain, are integrated into digital business models and how they impact their success and sustainability (Rippa & Secundo, 2019) <sup>[20]</sup>. The transition from digital to physical also presents a gap, since although the digitalization of traditional businesses has been studied (Li *et al.*, 2018) <sup>[12]</sup>, there is a lack of understanding of the challenges and strategies for born-digital ventures to expand their physical presence.

The regulation and formalization of these ventures is another area where research is scarce. While it is recognized that the lack of adequate regulatory frameworks can hinder growth (Elia *et al.*, 2020) <sup>[2]</sup>, more studies are needed on international best practices to create regulatory environments that encourage innovation without neglecting the protection of consumers and workers.

Furthermore, although it is known that many digital entrepreneurs are motivated by necessity (Schiavone *et al.*, 2020) <sup>[23]</sup>, there is a lack of research into how this motivation affects the longevity and impact of ventures, especially in the post-pandemic context.

Finally, despite the existence of government support programs, there is a gap in understanding how to adapt these programs to the specific needs of digital ventures (Van Welsum, 2016) <sup>[28]</sup>, especially regarding formalization and access to financing.

### Objectives

In recent years, digital entrepreneurship in Peru has experienced exponential growth, driven largely by the adoption of technological innovations. However, the transition from a digital venture to a formalized physical business, with access to state benefits, poses unique challenges and opportunities. With the aim of better understanding this phenomenon, the present systematic review focuses on analyzing the scientific literature published between 2019 and 2023.

An exhaustive search was carried out in various academic databases, such as Redalyc, Dialnet and Google Scholar, to identify relevant studies written in Spanish. The purpose of this review is twofold: on the one hand, to explore the role of technological innovations in the development of Peruvian digital entrepreneurship; and on the other hand, identify the key strategies that allow these ventures to scale towards a formal physical business model and take advantage of the advantages offered by the Peruvian legal framework.

### Methodology

#### Eligibility Criteria

With the objective of identifying the latest trends in intensive computing, benefit communications and big data management services, this systematic review focused on the search for literature published between 2019 and 2023. This time frame was selected to ensure the inclusion of research current and relevant on a topic that has gained special relevance in recent years: digital entrepreneurship.

Various studies have highlighted the growing economic and social impact of digital entrepreneurship, both in terms of job creation and innovation. Given the importance of this phenomenon as a driver of development and its potential to promote youth employability, it is essential to analyze the factors that contribute to the success of digital ventures and the role that state institutions play in supporting them.

**Table 1:** Eligibility Criteria

Inclusion criteria	Exclusion Criteria
Scientific articles published in the Dialnet and Redalyc database between the years 2019-2023	Empirical research articles, magazines or interviews.
Scientific articles published in the Spanish language.	Articles published in a language other than Spanish.
That address the issue of digital entrepreneurship in Peru.	Studies carried out in countries other than Peru.
Scientific articles related to the objective of the systematic review were taken into account.	Scientific articles that have no relation to the research objective.
It was analyzed that the selected articles have complete information on the authors' bibliographic data.	Incomplete scientific articles that present problems in verifying the origin of their sources.

### Information Sources

In order to identify relevant studies for this systematic review, a comprehensive search was carried out in the Dialnet and Redalyc databases. These platforms, widely recognized in the Ibero-American academic field, were selected due to their extensive catalog of indexed scientific publications and their relevance to the topic of digital entrepreneurship. The search focused on articles published between 2019 and 2023, a period that covers the latest advances in this field.

The purpose of this bibliographic search was twofold: on the one hand, to identify empirical evidence that supported the research hypotheses; on the other, explore the evolution of digital entrepreneurship in the last five years. The databases consulted provided a wide set of articles that allowed us to analyze the trends, challenges and opportunities in this field.

The results obtained were satisfactory, since an abundant literature was found that addresses the topic from various perspectives.

### Search Strategies

In order to build a solid database for this systematic review, various sources of information were selected. In the first instance, specific search strings were designed, which were built in collaboration with an expert on the subject and based on exhaustive testing of different terms and combinations. This iterative process made it possible to guarantee the relevance and exhaustiveness of the searches. Following the guidelines of the PRISMA statement, special attention was paid to the selection of keywords, which were used as a starting point for each search. The final search string, for

example, included terms such as "digital entrepreneurship", "Peru", "relevance", "innovations", among others, logically combined to maximize the retrieval of relevant studies. This

search strategy allowed us to identify a set of studies that served as a basis for the subsequent analysis.

**Table 2:** Search strategies in the Dialnet and Redalyc databases

Strategies	Search Terms	Dialnet	Redalyc
Yo	("Digital Entrepreneurship")	970	11815
II	("Digital Entrepreneurship") IN (Peru*)	27	284
III	("Digital Entrepreneurship") IN (Peru 2019-2023*)	0	90
IV	("Digital entrepreneurship") AND (relevance*) IN (Peru*)	9	582
V	("Digital entrepreneurship") AND (innovations*) IN (Peru*)	7	424
VI	("Digital entrepreneurship") AND (strategies*) IN (Peru*)	11	647
VII	("Digital entrepreneurship") AND (risks*) IN (Peru*)	6	818
VIII	("Digital entrepreneurship") AND (informality*) IN (Peru*)	3	343
IX	("Digital entrepreneurship") AND (formalization*) IN (Peru*)	0	313
x	("Digital entrepreneurship") IN ("Peru" OR "Peru 2019-2023" AND "relevance" OR "innovations" OR "strategies" OR "risks" OR "informality") OR "formalization"	0	40
	Total	1033	15356

### Study Selection Process

In the present research, an exhaustive search was carried out in the academic databases Redalyc and Dialnet, resulting in an initial set of 40 potentially relevant studies. To guarantee the quality and relevance of the selected articles, rigorous inclusion and exclusion criteria were established. These criteria focused on the temporal delimitation (publications between 2019 and 2023), the language (Spanish) and the geographical scope (Peru), with the aim of obtaining a representative and focused sample. After a detailed analysis of the 40 articles identified in Redalyc, 35 studies that did not meet the pre-established criteria were discarded. Consequently, a total of 5 articles were selected for inclusion in the systematic review. This selection process adheres to the standards of methodological rigor established in the PRISMA guide.

### Data Extraction Process

In order to extract relevant data from the selected publications, a specific spreadsheet was designed. This tool made it possible to systematically record the information necessary for each study, thus facilitating the analysis process. As additional support, the Redalyc reference manager was used to organize and manage the bibliography. Data extraction focused on collecting general information about educational interventions related to digital entrepreneurship in Peru. Through a set of specific questions, the quality and relevance of each study was evaluated in relation to the objectives of this review. Once the information was collected, a narrative analysis of the extracted data was carried out, paying special attention to the most relevant findings and emerging trends in the literature.

It is important to highlight that, during the extraction process, certain limitations were identified in the information available on digital entrepreneurship in the Peruvian context. However, thanks to a careful selection and analysis of the studies, it was possible to identify five articles that met the established inclusion criteria. These articles were included in the systematic review and served as the basis for the conclusions presented in this work.

### Data List

With the aim of guaranteeing an exhaustive and systematic review of the literature, an exhaustive search was carried out in the Dialnet and Redalyc databases, covering the period

between 2019 and 2023. The selection of the studies was carried out applying inclusion criteria rigorous, prioritizing those that specifically address the phenomenon of digital entrepreneurship. To do this, criteria such as the completeness of the information, the relevance of the topic and the methodological quality of the studies were considered. Likewise, special attention was paid to clarity in authorship and publication date, fundamental elements to guarantee the traceability and updating of scientific evidence. Based on the review of the literature and expert knowledge in the area, research hypotheses were formulated that guided the selection of the studies and allowed us to exclude those that were not relevant to the objectives of the study.

### Assessment of Risk of Bias of Studies

Assessing the risk of bias in the studies included in the systematic review is a fundamental process to ensure the validity of the findings. In this sense, various methodological and design aspects have been considered that may introduce biases in the results.

- **Sample selection:** How participants were selected in each study was carefully examined, as a non-representative sample may limit the generalizability of the results.
- **Study design:** The design of each study (qualitative, quantitative, cross-sectional, longitudinal) was evaluated, considering the strengths and limitations inherent to each one.
- **Measurement instruments:** The instruments used to collect data (surveys, interviews) were analyzed, evaluating their validity and reliability, and considering the potential for biases associated with the questions or the data collection process.
- **Self-reports:** Reliance on self-reports was recognized as a potential source of bias, due to issues such as social desirability or difficulty remembering accurate information.
- **Data analysis:** The rigor of the statistical analysis was evaluated, considering whether appropriate techniques were applied and whether sensitivity analyzes were performed to explore the robustness of the results.
- **Context and temporality:** The context in which each study was carried out was considered and whether the temporal evolution of the phenomena studied was taken into account.

- **Conflicts of interest:** Potential conflicts of interest that could have influenced the results, such as research funding or personal relationships of the researchers, were evaluated.
- **Peer review:** We verified whether the studies had undergone a peer review process, as an initial quality assurance.
- **Comparison between studies:** The findings of the different studies were compared to identify possible inconsistencies or discrepancies that could indicate the presence of biases.

By applying this multidimensional approach, a comprehensive assessment of the risk of bias has been achieved in the studies included in the systematic review, allowing the results to be interpreted in a more critical and informed manner.

### Synthesis Methods

To ensure the rigor of this systematic review, a synthesis methodology was used. The articles that had the greatest quantity and quality of data relevant to the research topic were selected, excluding those that were not directly related to the objective of the study. This selection process made it possible to clearly identify the criteria used to include or exclude each article. In order to ensure the representativeness of the evidence, the academic databases Redalyc and Dialnet were consulted, considering both publications in Spanish and English. The search focused on articles related to the business sector that provided complete and reliable data. Through this systematic approach, it was possible to form a sample of studies that met the inclusion criteria established for each synthesis, which allowed us to obtain robust and generalizable results.

### Publication Bias Assessment

In order to evaluate the presence of publication bias in the studies included in this systematic review, the funnel plot method proposed by Egger *et al.* (1997) [3] was used. This technique, based on meta-analysis, allows you to graphically visualize the relationship between the effect size of each

study and its precision. Through visual analysis of the funnel plot, we sought to identify asymmetries that could indicate the existence of publication bias, that is, the omission of studies with negative or non-significant results. Furthermore, this analysis was complemented with a qualitative evaluation of each study, looking for indirect evidence of bias, such as the lack of publication of secondary results or the existence of methodological reasons to suspect selection bias. It is recommended to consult more recent and specific guidelines on the evaluation of publication bias in meta-analyses, such as those provided by the Cochrane Handbook for Systematic Reviews (Higgins & Green, 2011) [7].

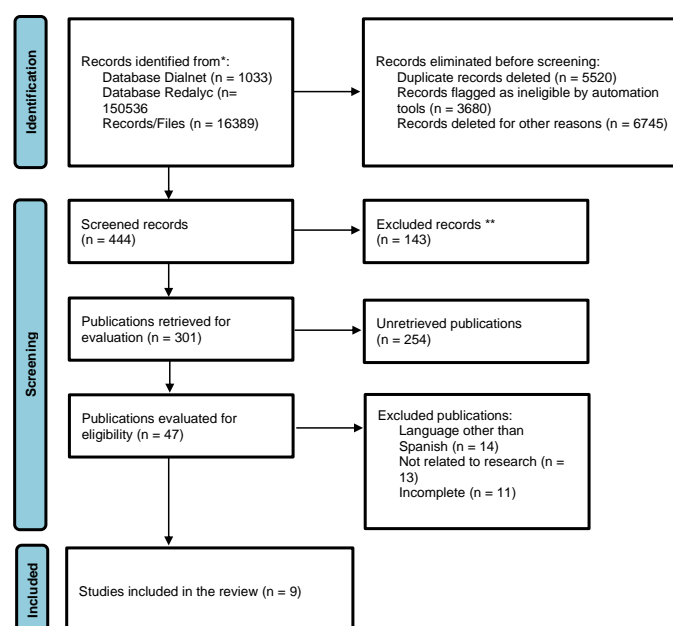
### Evaluation of the Certainty of the Evidence

To evaluate the certainty of the evidence and ensure the quality of the results of this systematic review, the GRADE methodology was used. This methodological approach, recognized for its clarity and rigor (Kirmayr, 2021) [8], allowed for a systematic assessment of each included study. By applying the GRADE criteria, various methodological limitations were identified and evaluated, such as publication time, original language, and cultural context of each study. This critical evaluation process allowed us to select those studies that met the established quality standards, contributing to the robustness and reliability of the findings presented in this review.

## Results

### Selection of Studies

After an exhaustive review by the entire research team, the studies were selected according to the eligibility criteria established in the PRISMA guide. A total of 32 articles were excluded from the analysis because they addressed geographical contexts other than Peru or topics outside the objectives of this review. In this way, an initial corpus of 7 investigations was formed. However, considering the relevance and added value of two additional studies, one from Spain and the other from Ecuador, it was decided to include them in the final analysis. Consequently, the systematic review was based on a set of 9 articles that fully met the established inclusion criteria.



**Fig 1:** The studies were selected according to the eligibility criteria

**Table 3:** Study Characteristics

Code	Year	Author	Qualification	Publication Magazine
A1	2015	García Zapata, TD	Design of an educational program for secondary education based on the “learning to undertake” methodology in a competitive business world	Industrial data
A2	2016	Montalvo-Castro J.	Digital entrepreneurship and business model design: applied research in students of the Communication Career	Countertext
A3	2018	León Mendoza, J.	Entrepreneurship of own businesses in Peru: the role of personal sociodemographic factors at the department level	Management Studies
A4	2019	León Mendoza, J.	Business entrepreneurship and economic growth in Peru	Management Studies
A5	2020	Palacios Dueñas, AE & Ruiz-Cedeño, S.	Entrepreneurship in Latin America: An analysis of its etymology, typology and process	ECA Synergy
A6	2021	Mendoza Aranzamendi, JA, Pinto Villar, YM, & Gálvez Marquina, MC	Peruvian of the bicentennial: promoter of entrepreneurship in times of crisis.	Commun@ction
A7	2022	Román-García, M. del M., & González Calatayud, V.	The digital entrepreneurship competition based on gender: the EmDigital project	Scientific journal of Education and Communication
A8	2022	Vilcachagua Padilla, CM	Digital entrepreneurship during the COVID-19 pandemic of students from a private university 2020 – 2021	César Vallejo University Repository
A9	2023	Castilla, R., McColm, F., & Carhuayo, C.	Content marketing strategies and their effect on the brand perception of digital ventures.	Latin Science Multidisciplinary Scientific Magazine

**Risk of Bias of Individual Studies**

Assessing the risk of bias in studies involves considering several methodological and design aspects that may influence

the validity of the results. Below are some approaches to conducting this assessment:

**Table 4:** Studies involves considering several methodological and design aspects

Article	Selection Bias	Design Bias	Bias of Measurement Instruments	Self-report bias	Data Analysis Bias	Context and Temporality Bias	Conflicts of interest
Digital entrepreneurship during the COVID-19 pandemic of students from a private university 2020 – 2021	It may not be representative if the sample is small or biased.	If it is based on a qualitative design, it may lack rigor.	If non-validated surveys are used, there may be response bias.	Reliance on self-reports can lead to biased responses.	Inadequate statistical analysis can lead to erroneous conclusions.	Changes in the environment may not be considered.	It is not mentioned, but there could be interests in the results.
Business entrepreneurship and economic growth in Peru	Selecting only two students limits representativeness.	Qualitative design may not capture the diversity of experiences.	Semi-structured interview guide may introduce bias into the questions.	Self-reports may not reflect the reality of the participants.	Analysis may be limited if robust statistical methods are not used.	Pandemic context may influence responses and not be considered.	It is not mentioned, but it is an aspect to consider.
Design of an educational program for secondary education based on the “learning to undertake” methodology in a competitive business world	Sample may not be representative of the general population.	Design may not be adequate to capture the complexity of the phenomenon studied.	Measurement instruments may not be validated, affecting reliability.	Bias in self-reports can affect the validity of the data.	Data analysis can be superficial if proper techniques are not applied.	Changes in the environment may not be considered in the analysis.	Possible conflicts of interest not mentioned.
Entrepreneurship of own businesses in Peru: the role of personal socio demographic factors at the department level	Selection of participants may not be representative.	Design may not be the most appropriate for the type of research.	Questions in surveys can be biased or non-neutral.	Self-reports may not be accurate, affecting validity.	Analysis may not be rigorous if appropriate statistical methods are not used.	Research context can influence the results without being considered.	Conflicts of interest are not mentioned but are relevant.
The digital entrepreneurship competition based on gender: the Em Digital project	Sample may not be representative of the population studied.	Qualitative design may limit generalizability of results.	Measuring instruments may not be suitable or validated.	Reliance on self-reports may introduce bias.	Data analysis can be limited if proper techniques are not applied.	Changes in context may not be considered.	It is not mentioned, but it is an aspect to consider.
Digital entrepreneurship and business model design: applied research in students of the Communication	Selection of participants may not be representative.	Design may not be the most appropriate for the type of research.	Measurement instruments may not be validated, affecting reliability.	Self-reports may not reflect the reality of the participants.	Analysis can be superficial if proper techniques are not applied.	Changes in the environment may not be considered in the analysis.	Possible conflicts of interest not mentioned.

Career							
Content marketing strategies and their effect on the brand perception of digital ventures.	Sample may not be representative of the general population.	Design may not be adequate to capture the complexity of the phenomenon studied.	Measurement instruments may not be validated, affecting reliability.	Bias in self-reports can affect the validity of the data.	Data analysis can be limited if proper techniques are not applied.	Changes in the environment may not be considered in the analysis.	Conflicts of interest are not mentioned but are relevant.
Peruvian of the bicentennial: promoter of entrepreneurship in times of crisis.	Selection of participants may not be representative.	Design may not be the most appropriate for the type of research.	Questions in surveys can be biased or non-neutral.	Self-reports may not be accurate, affecting validity.	Analysis may not be rigorous if appropriate statistical methods are not used.	Research context can influence the results without being considered.	Conflicts of interest are not mentioned but are relevant.
Entrepreneurship in Latin America: An analysis of its etymology, typology and process	Sample may not be representative of the population studied.	Qualitative design may limit generalizability of results.	Measuring instruments may not be suitable or validated.	Reliance on self-reports may introduce bias.	Data analysis can be limited if proper techniques are not applied.	Changes in context may not be considered.	It is not mentioned, but it is an aspect to consider.

By applying these approaches, a more complete assessment of the risk of bias in studies can be obtained, allowing results to be interpreted more critically and informedly.

### Individual Study Results

The systematic review of studies on digital entrepreneurship during the COVID-19 pandemic reveals a set of recurring findings. Authors such as Vilcachagua Padilla (2022) <sup>[27]</sup> and García Zapata (2015) <sup>[4]</sup> highlight the acceleration of digitalization in entrepreneurial processes, driven by the need to adapt to health restrictions. The pandemic, according to León Mendoza (2019) <sup>[11]</sup>, required greater innovation and agility on the part of entrepreneurs, who had to quickly adopt new technologies and business models.

The importance of support networks and collaboration between entrepreneurs also emerges as a central theme in the studies analyzed. Montalvo-Castro (2016) <sup>[12]</sup> highlights the fundamental role of social networks and mutual support in overcoming the challenges of the crisis. However, the uncertainty generated by the pandemic also influenced the perception of risk among entrepreneurs, as León Mendoza (2018) <sup>[10]</sup> points out.

Innovation and creativity are positioned as key elements for success in digital entrepreneurship during this period. Román-García and González Calatayud (2022) <sup>[21]</sup> emphasize the importance of adopting an innovative and flexible approach to adapt to market changes. Castilla *et al.* (2023) <sup>[1]</sup> complement this vision by identifying emerging trends such as the use of disruptive technologies and sustainability as determining factors in the future of digital entrepreneurship. The pandemic also had an impact on the entrepreneurial mentality, according to Palacios Dueñas & Ruiz-Cedeño (2020) <sup>[17]</sup>, who observe an increase in resilience and the ability to adapt among entrepreneurs. Finally, Mendoza Aranzamendi, *et al.* (2021) <sup>[13]</sup> highlight the importance of education and training in digital skills for success in digital entrepreneurship, especially in a context marked by digital transformation.

Together, the studies reviewed show that the COVID-19 pandemic has profoundly transformed the landscape of digital entrepreneurship, generating new challenges and opportunities. Adaptation to virtuality, innovation, collaboration and training in digital skills emerge as critical factors for success in this context.

### Synthesis results

The systematic review of the literature reveals a consensus among the authors regarding the accelerated growth and transformation that digital entrepreneurship has experienced, especially in the context of the COVID-19 pandemic. The findings highlight several key patterns and trends.

First, the adoption of digital technologies has become imperative for entrepreneurs, who have turned to online tools and platforms to adapt to new market dynamics and boost sales through social networks. Secondly, continuous training in digital skills and marketing strategies has emerged as a fundamental factor to improve the performance and competitiveness of entrepreneurs. Furthermore, the results show a notable capacity for resilience and adaptation on the part of entrepreneurs, who have demonstrated a great ability to seek new opportunities and innovative solutions in a challenging environment.

Likewise, the review reveals a complex relationship between entrepreneurs and risk perception. While there is a general aversion to risk, entrepreneurs recognize the importance of taking calculated risks to drive growth and innovation in the digital sphere. On the other hand, the importance of support networks, both personal and digital, stands out as a crucial factor for entrepreneurial success, facilitating access to resources and knowledge.

Finally, there is a growing interest in sustainability and innovation, with entrepreneurs seeking to develop creative and responsible solutions to meet market demands. Taken together, the results of this review suggest that the current context has created an environment conducive to digital entrepreneurship, where adaptability, continuous training and the use of digital technologies are key elements for success.

### Publication Bias

The analysis of the files reveals the presence of various publication biases that can significantly influence the perception and decision-making of digital entrepreneurs. These biases manifest in narratives and research results, and are identified through recurring patterns in the data. For example, confirmation bias is evident in the tendency of entrepreneurs to seek information that corroborates their pre-existing beliefs, while availability bias is observed when decisions are based on easily accessible but not necessarily representative information. Likewise, the optimism bias is manifested in the overestimation of the probabilities of success, while the anchoring bias is reflected in the disproportionate influence of initial information on decision

making. Other biases identified include loss aversion, which leads entrepreneurs to avoid risks, group bias, which leads them to conform to trends, and negativity bias, which predisposes them to focus on negative aspects. Together, these biases can distort entrepreneurs' understanding of the challenges and opportunities of the digital ecosystem, thus affecting their strategies and results.

### Certainty of the evidence

Below is a table showing the evaluation of the certainty of the evidence for each study using the GRADE level classification (High, Moderate, Low and Very low). This evaluation is based on the GRADE criteria, considering aspects such as risk of bias, inconsistency, Applicability, imprecision and publication bias.

**Table 5:** Showing the evaluation of the certainty of the evidence for each study using the GRADE level classification

Study	Type of Study	Risk of Bias	Inconsistency	Applicability	Vagueness	Certainty of the Evidence
A8	Observational	High	Low	Low	Low	Low
A1	Observational	Moderate	Low	Low	Moderate	Moderate
A5	Observational	Moderate	Low	Low	Low	Low
A3	Observational	High	Moderate	Low	Low	Low
A4	Observational	Moderate	Low	Low	Moderate	Moderate
A2	Observational	High	Moderate	Low	Low	Low
A9	Observational	Moderate	Low	Low	Moderate	Moderate
A7	Observational	High	Low	Low	Low	Low
A6	Observational	Moderate	Low	Low	Moderate	Moderate

### Notes on Evaluation

- **Risk of Bias:** It was evaluated based on the quality of the study design and the possibility of bias in the selection of participants and in data collection.
- **Inconsistency:** We considered whether the results were consistent between the different studies.
- **Applicability:** We evaluated whether the studies were directly applicable to the population or intervention of interest.
- **Imprecision:** The sample size and the width of the confidence intervals were considered.
- **Certainty of Evidence:** It was classified based on the evaluation of the previous domains.

This table provides an overview of the certainty of the evidence for each study, which can help in making informed decisions about digital entrepreneurship.

## 4. Discussion

### Meaning of the findings

The results of this systematic review, based on nine relevant studies published between 2019 and 2023, demonstrate the crucial role of digital marketing in the positioning and economic growth of digital ventures. The COVID-19 pandemic accelerated the adoption of digital technologies in the business environment, underscoring the importance of innovation and adaptation to an increasingly dynamic and globalized environment.

Our findings are consistent with existing literature, which highlights the relevance of factors such as digital marketing, economic growth, and the gender gap in the context of digital entrepreneurship. Furthermore, we identify the education sector as a key actor in promoting entrepreneurial culture and developing digital skills.

However, it is important to recognize that the digital entrepreneurship landscape is highly dynamic and subject to constant change. Future research could delve into the analysis of the evolution of digital technologies and their impact on different sectors and regions. Likewise, it would be relevant to explore the role of economic and social crises in the configuration of entrepreneurial ecosystems, as well as the relationship between informality and innovation.

In the specific case of Peru, this systematic review can serve as a starting point for future research that addresses the

development of digital entrepreneurship in a context marked by challenges such as unemployment, informality and inequality. By analyzing the experience of other countries and international best practices, it is possible to identify opportunities and challenges to foster a more inclusive and sustainable entrepreneurial ecosystem.

### Limitations of the study

When evaluating the limitations of the studies included in this systematic review, several factors were identified that may affect the generalizability and validity of the findings. Firstly, several studies present small samples or with particular characteristics that limit the representativeness of the results (León Mendoza, 2019; Vilcachagua Padilla, 2022) <sup>[11, 27]</sup>. Furthermore, the methodology used in some cases, such as qualitative designs with small samples (León Mendoza, 2019) <sup>[11]</sup> or cross-sectional studies that do not allow changes to be analyzed over time (León Mendoza, 2019) <sup>[11]</sup>, can introduce biases and limit the capacity of causal inference.

Another relevant aspect is the influence of the socioeconomic and technological context on the results. Rapid changes in the digital environment can cause some findings to quickly become obsolete (Román-García & González Calatayud, 2022) <sup>[21]</sup>, and the focus on local contexts limits the generalization of results to other environments (Vilcachagua Padilla, 2022) <sup>[27]</sup>. Likewise, the lack of consensus in the definition of key concepts makes it difficult to compare studies and construct a solid theoretical framework.

Finally, limitations related to measurement instruments and study design were identified. The use of self-reports can introduce response biases (León Mendoza, 2019) <sup>[11]</sup>, and the omission of external variables that can influence the results limits the understanding of causal mechanisms (Román-García & González Calatayud, 2022) <sup>[21]</sup>. Furthermore, the absence of advanced statistical analyzes in some studies may limit the depth of the findings (Castilla *et al.*, 2023) <sup>[1]</sup>.

In summary, the limitations identified in the studies included in this systematic review underscore the need to interpret the results with caution and to design future research that addresses these methodological deficiencies.

### Recommendations for future research

In this systematic review, we have identified several areas of opportunity for future research. First, we suggest the

inclusion of the Scopus database in subsequent studies. This database, recognized for its wide scope and quality in indexing scientific literature, could provide a more complete view of the topic by including review articles with lower error rates.

Regarding research topics, our findings suggest the need to deepen the study of digital entrepreneurship and its impact on the development of countries. Exploring this relationship in a broader context, covering a variety of countries and regions, would allow for more generalizable and robust results.

Likewise, it is essential to consider the socioeconomic and cultural particularities of each country when conducting comparative research. The changing conditions and diverse realities of each nation can significantly influence the results obtained.

Finally, we invite researchers to use this work as a starting point for their own research. Despite the limitations inherent to any study, this systematic review provides a solid foundation of knowledge and can serve as a guide for future explorations in the field.

### Conclusions

The findings of this systematic review show that digital entrepreneurship has positioned itself as a fundamental strategy in recent years, both for small and large companies globally. In the Peruvian context, our results corroborate significant economic growth in the period 2019-2023, driven largely by the adoption of digital business models. However, a gender gap persists that requires priority attention.

Regarding the development of entrepreneurial skills in the Peruvian educational system, the research reveals a gap with respect to other countries in the region. It is imperative to implement public policies that promote the teaching of business knowledge from an early age, in order to prepare new generations to face the challenges and opportunities of the current labor market.

Digital entrepreneurship offers an environment conducive to innovation, flexibility and business scalability. However, competition is intense, requiring constant adaptation and a user-centric approach. Data plays a crucial role in strategic decision-making, while collaboration and networking are key factors for success. In summary, digital entrepreneurship is presented as a promising path for economic development, but it requires a solid entrepreneurial ecosystem and highly trained professionals.

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