AG EDITOR

REVIEW

A Systematic Review Looking at Digital Integration in Entrepreneurship Education in Higher Education

Una revisión sistemática sobre la integración digital en la educación empresarial en la educación superior

Asmar Yulastri[1] ⓘ ✉, Ganefri[2] ⓘ ✉, Yudha Aditya Fiandra[2] ⓘ ✉, Feri Ferdian[1] ⓘ ✉, Elfizon[2] ⓘ ✉

[1]Faculty of Tourism and Hospitality, Universitas Negeri Padang. Indonesia.
[2]Faculty of Engineering, Universitas Negeri Padang. Indonesia.

ABSTRACT

Introduction: digital entrepreneurship has grown significantly in recent years, yet studies that specifically explore its integration into higher and vocational education remain limited. This gap highlights the need for a comprehensive synthesis of existing research to understand developments and identify future opportunities.
Method: the author conducted a Systematic Literature Review (SLR) using articles indexed in ScienceDirect and Springer databases, published between 2019 and 2024. Keywords included "digital," "entrepreneurship," "education," and "higher education." A total of 1081 articles were identified, then filtered using PRISMA guidelines. After removing duplicates and applying inclusion criteria, 60 articles were analyzed. Bibliometric analysis was also performed using VOSviewer.
Results: the review found that the International Journal of Entrepreneurial Behavior and Research published the most articles on this topic. Research activity and citations increased significantly from 2018 to 2022. Qualitative methods were the most commonly used, and the most cited authors were from developed countries, especially the USA and Europe. Two major research foci emerged: the role of digital entrepreneurial ecosystems and pedagogical models used in digital entrepreneurship education.
Conclusions: digital entrepreneurship is gaining scholarly attention, especially in developed economies. However, its educational dimensions are still underrepresented. The findings suggest the need for more research on innovative teaching models, cross-disciplinary collaboration, and global approaches to support the development of digital entrepreneurship education in higher education settings.

Keywords: Entrepreneurship Education; Digital Entrepreneurshi; Vocational; Higher Education.

RESUMEN

Introducción: el emprendimiento digital ha crecido significativamente en los últimos años; sin embargo, los estudios que exploran específicamente su integración en la educación superior y profesional siguen siendo limitados. Esta brecha resalta la necesidad de una síntesis exhaustiva de la investigación existente para comprender los avances e identificar oportunidades futuras.
Método: el autor realizó una Revisión Sistemática de la Literatura (RSL) utilizando artículos indexados en las bases de datos ScienceDirect y Springer, publicados entre 2019 y 2024. Las palabras clave incluyeron «digital», «emprendimiento», «educación» y «educación superior». Se identificaron 1081 artículos, que se filtraron según las directrices PRISMA. Tras eliminar duplicados y aplicar los criterios de inclusión, se analizaron 60 artículos. También se realizó un análisis bibliométrico con VOSviewer.
Resultados: la revisión reveló que la Revista Internacional de Comportamiento Empresarial e Investigación (International Journal of Entrepreneurial Behavior and Research) publicó la mayor cantidad de artículos

sobre este tema. La actividad de investigación y las citas aumentaron significativamente entre 2018 y 2022. Los métodos cualitativos fueron los más utilizados, y los autores más citados provenían de países desarrollados, especialmente de EE. UU. y Europa. Surgieron dos enfoques de investigación principales: el papel de los ecosistemas de emprendimiento digital y los modelos pedagógicos utilizados en la educación para el emprendimiento digital.

Conclusiones: el emprendimiento digital está captando la atención académica, especialmente en las economías desarrolladas. Sin embargo, sus dimensiones educativas aún están poco representadas. Los hallazgos sugieren la necesidad de más investigación sobre modelos de enseñanza innovadores, colaboración interdisciplinaria y enfoques globales para apoyar el desarrollo de la educación para el emprendimiento digital en la educación superior.

Palabras clave: Educación para el Emprendimiento; Emprendimiento Digital; Formación Profesional; Educación Superior.

INTRODUCTION

Entrepreneurship was initially characterized as the process of recognizing and misapplying business opportunities to present items or services.[1] This term remains an important definition given the impact of entrepreneurship on job creation.[2,3] However, in recent years entrepreneurship is also understood as a way of thinking and behaving.[4,5]

Entrepreneurship manifests in economic activity, and entrepreneurial behavior and activities that include formal and informal can create prosperity for entrepreneurs themselves and even the people involved in its activities.[6,7,8] In turn, entrepreneurship can contribute to economic development through enterprises that grow and serves as a source of income, and create jobs for a population.[9,10,11]

Entrepreneurship is broadly defined as the process of identifying, developing, and exploiting opportunities to create new goods and services. It encompasses a mindset and behavior that foster innovation, risk-taking, and value creation. In the digital era, entrepreneurship has evolved into digital entrepreneurship, a concept that integrates digital technologies into business creation and management processes. Digital entrepreneurship involves the use of digital tools, platforms, and infrastructures to innovate, start, and scale businesses in ways that were previously not possible. The topic of entrepreneurship has received considerable attention among researchers over the last decades.[12,13] Entrepreneurship is a central issue in both developed and developing countries as an effort to improve the economic welfare of a country.[14,15] This implies that an increase in entrepreneurs in a country will promote prosperity and reduce poverty.[16,17]

Entrepreneurship education is defined as an educational process to build entrepreneurial attitudes and skills.[8,18] This definition reflects that entrepreneurship education involves applying, designing, and implementing strategies for a learning environment.[9,19]

Enterprise instruction has gotten to be a need for policymakers and is creating as a field of think about.[13] Its ubiquity with policymakers, scholastics, analysts, and coaches can be authentically ascribed to its positive effect on the creation of unused endeavors[20,21] and thus on the economic development of countries[22] which has been observed by many researchers. Although some academics have the contrary view, others define entrepreneurship as an attitude that can be taught. This is in contrast to certain researchers who hold the view that entrepreneurship is something that is either born or manufactured.[3,23]

A study defines entrepreneurship education as an organized transfer of entrepreneurial knowledge.[2,9] Fiet offers a similar definition of entrepreneurship education as the formal transmission of structured entrepreneurial competencies, which are made up of ideas, abilities, and mental faculties that people utilize when beginning and growing their enterprises.[24,25] Often different definitions lead to different perspectives on the phenomenon, which can be illustrated by the emergence of several other definitions below. Entrepreneurship education, according to Jones et al.[26], is the process of giving people the abilities to see opportunities and the insights, knowledge, and skills to act on them. For those interested in starting a business or developing a small firm, a study describe entrepreneurship education as a formal activity that informs, trains, and educates them.[27]

A study claims that entrepreneurship education is a particular program created to help people become aware of the job alternatives available to entrepreneurs and support them in making that decision.[28] This exercise focuses on fostering entrepreneurial abilities and attitudes while assisting interested applicants in selecting alternate career options.[29,30,31]

The dominating paradigm of entrepreneurship development at one time was that entrepreneurship is born, not learned. From this paradigm, researchers have slowly shifted to the paradigm of training the entrepreneurial spirit, which explains the growing popularity of entrepreneurship education in today's society.[12,14,32] It is generally known that entrepreneurship is one of the main drivers of a country's economic development.[33]

Almost all business sectors have changed the business model that used to be traditional, turning it into a new model adapted to digital challenges.[34,35] This transformation, which is also a challenge, actually occurs in the field of entrepreneurship, which allows the use of digital technology as an affirmation to face a new revolution, namely the digital revolution.[36,37]

Hull et al.[38] divide digital entrepreneurship into three categories. The first is light digital entrepreneurship, where entrepreneurship activities still involve traditional methods. The second is moderate digital entrepreneurship, where entrepreneurship activities cannot be carried out without a digital infrastructure. The third is extreme digital entrepreneurship, all business processes, products, services, advertising, and distribution are done completely digitally. The topic of digital entrepreneurship has experienced drastic growth in several studies.[39] This is manifested in a wide range of terminology from emerging vocabulary (internet entrepreneurship, cyber entrepreneurship, digital entrepreneurship, etc.). Despite the differences in vocabulary, research on digital entrepreneurship has grown rapidly when viewed from the increasing number of studies published every year.[40,41] However, there are still few articles that contain or review the literature on digital entrepreneurship systematically, especially about entrepreneurship education.

Given the lack of academic literature on the topic of digital entrepreneurship, especially in the context of tertiary institutions and vocations, this study aims to map the literature on digital entrepreneurship to help us understand where and where research on digital entrepreneurship is headed which will certainly provide opportunities for future research. front. Digital entrepreneurship has become a powerful driver of economic transformation globally. According to the Global Entrepreneurship Monitor, digital-based startups account for over 30 % of new business ventures worldwide, with significant contributions to GDP growth and employment. In Indonesia, the number of digital entrepreneurs increased by more than 25 % from 2018 to 2022, largely due to the rapid expansion of internet access and e-commerce platforms. However, while the business potential is evident, the academic exploration—particularly in the context of digital entrepreneurship education in higher and vocational education settings—remains limited and fragmented.

This study used a Systematic Review to explore and identify digital entrepreneurship education in tertiary or vocational schools based on pre-designed research questions. First, we present a systematic review of the literature on digital entrepreneurship using bibliometric analysis. This review is expected to help identify what has been studied by previous literature on digital entrepreneurship. Second, this review allows us to propose a suitable, holistic, and integrated digital entrepreneurship education model. Third, we proposes several potential directions and establishes a roadmap for future research agendas.

Based on this context, the main research question of this study is: "How is digital entrepreneurship education being integrated into higher and vocational education globally, and what are the emerging trends, models, and research gaps?" The objective of this study is to systematically identify, categorize, and analyze the scientific literature on digital entrepreneurship education, focusing on trends, methodologies, authorship, and pedagogical frameworks. The hypothesis proposed is that digital entrepreneurship education is still underdeveloped in the academic context, especially in terms of standardized pedagogical approaches, despite its growing practical relevance.

METHOD

This study employed a descriptive-observational design through a Systematic Literature Review (SLR), aiming to analyze the integration of digital entrepreneurship education within higher and vocational education contexts. This type of research is non-experimental and aims to identify, classify, and interpret existing findings without manipulating any variables. The review was conducted between January and March 2024, and the process took place at Universitas Negeri Padang, Indonesia. The population in this context refers to all scientific articles addressing digital entrepreneurship in higher education. The study universe was defined as peer-reviewed articles published between 2019 and 2024 in international journals indexed in ScienceDirect and SpringerLink.

This article examines the current state of the field of the subject under investigation using a systematic literature review (SLR) methodology.[42,43] SLR is a relevant approach for producing a piece of knowledge, identifying a trend, and also the potential for future research. SLR method is based on manual screening for replicable processes which allows to minimize bias in research findings.[44] This method or strategy, as opposed to automatic screening, enables us to recognize and summarize all pertinent contributions using an open review process and offers a summary of both quantitative and qualitative issues.

This study aims to identify and answer several research questions including:
- RQ.1. What journals contain the most articles on digital entrepreneurship?
- RQ.2. How many articles and citations on the topic of digital entrepreneurship in the last 5 years?
- RQ.3. What methods are often used in the topic of digital entrepreneurship
- RQ.4. Who is the author with the most quotes on digital entrepreneurship?
- RQ.5. What country with the highest number of articles about digital entrepreneurship?

- RQ.6. What research objectives are often used as reasons for digital entrepreneurship research?
- RQ.7. What findings are found in digital entrepreneurship research?
- RQ.8. What is future research on digital entrepreneurship?

The field of study of entrepreneurship education does not yet have a specific database, so a search was conducted using the ScienceDirect and Springer databases with the keywords "digital" AND "entrepreneurship" AND "education" AND "higher education". The search is limited to articles published between 2019 and 2024. The criteria taken and discarded in selecting articles are listed in table 1.

No	Table 1. Inclusion and exclusion criteria	
	Inclusion Criteria	**Exclusion Criteria**
1	Time: Between 2019 and 2024	Before 2019
2	Language: English	Not English
3	Empirical research presented at conferences abroad and published in foreign publications	Books, Thesis, and Dissertation
4	Connected to higher education or vocational programs' digital entrepreneurship education	All educational levels (except in higher education or vocational)

From this search, there are a total of 1081 articles. The article is then filtered so that duplicate articles do not appear (the same articles indexed in more than one database). After a screening process to prevent duplication of articles, 601 articles were obtained. Of the 601 articles after being filtered using inclusion criteria with the provisions: (1) articles published from 2018-2022, (2) articles discussing digital entrepreneurship topics, (3) articles in English, and (4) articles are research papers, not from books or other sources. After this process, there were 114 articles remaining, after which a filter was carried out by reading the abstract and the contents of the article, 60 articles were found that met the requirements for in-depth analysis.

The PRISMA method was used to perform this literature review. It is possible to conduct literature reviews and meta-analyses using the PRISMA approach, which makes it simpler to examine the format of the roadmap for research objectives. PRISMA flowchart can be seen in figure 1.
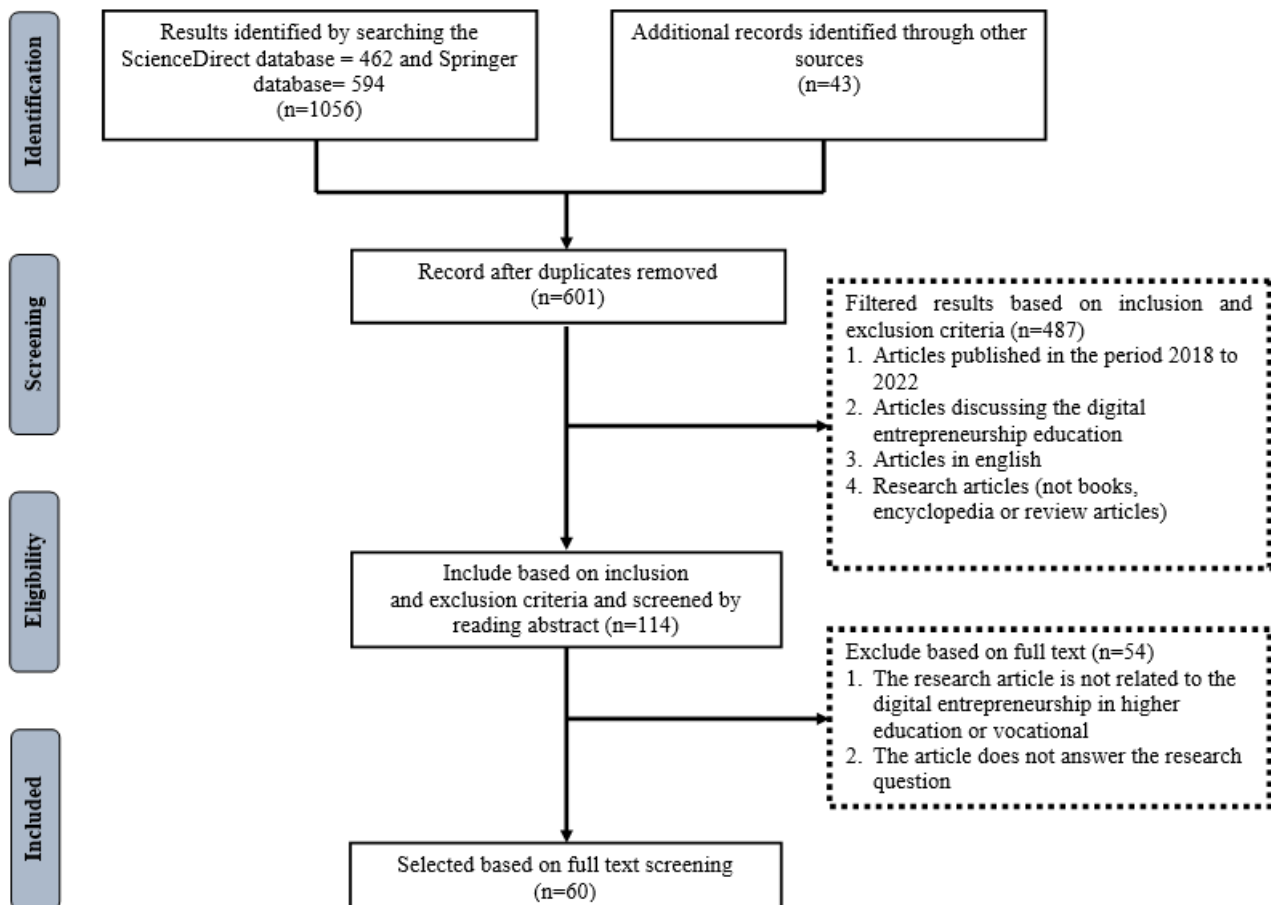

Figure 1. PRISMA flowchart

As the study involved publicly available data and no human subjects, ethical clearance was not required, but ethical principles of academic integrity and transparency were strictly followed throughout the review process.

RESULTS AND DISCUSSION

Bibliometric analysis is a popular method for exploring and analyzing scientific data.[45] The results of this bibliometric analysis use Scopus-indexed articles about digital entrepreneurship topics. The purpose of this bibliometric analysis is contained in this article to see and find out developments or trends in the topic of digital entrepreneurship. This analysis uses the VOSviewer application. Data was collected from the Scopus database using the keywords "digital" AND "entrepreneurship" AND "education" AND "higher education" from 2018 to 2022. Figure 2 and figure 3 below show the results of this visualization.
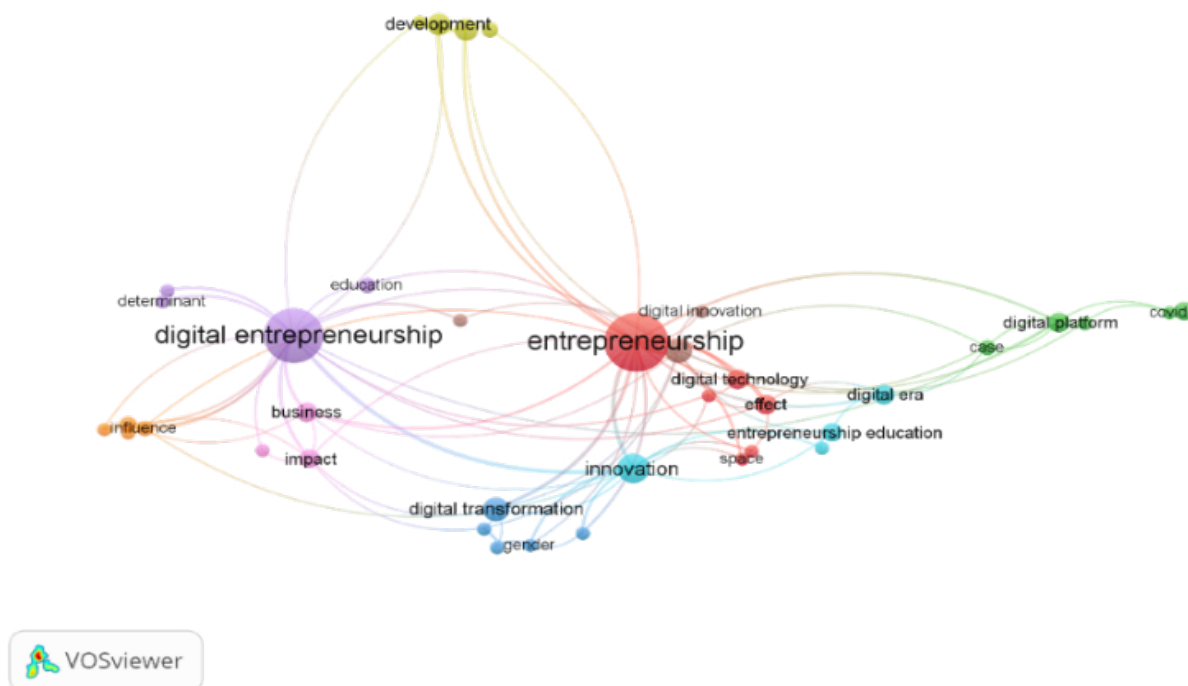

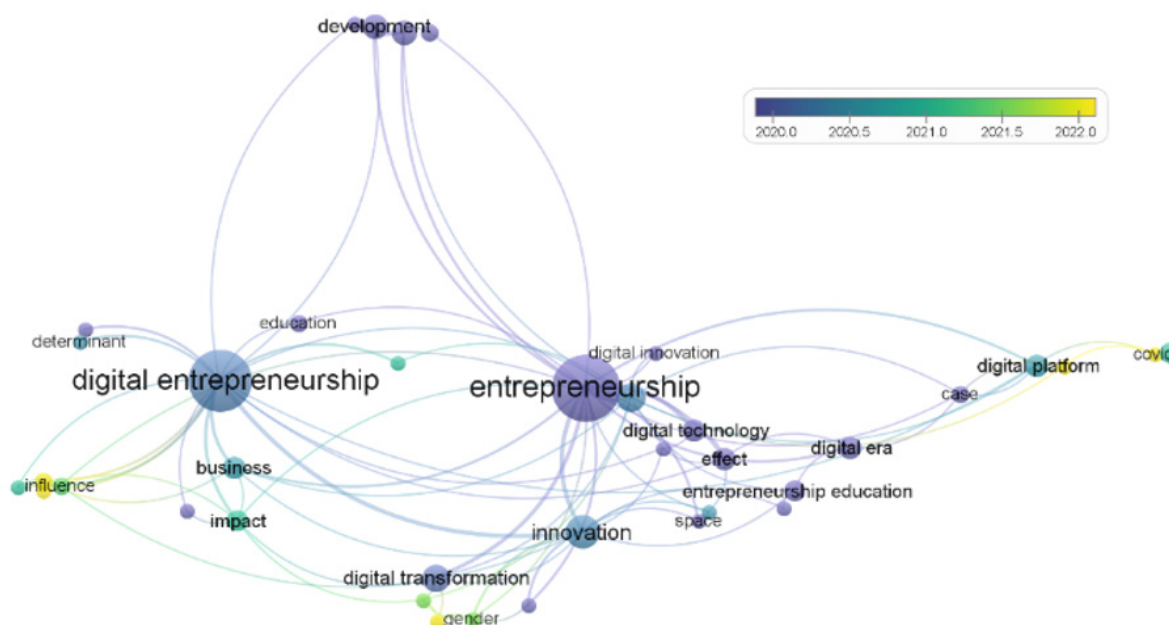**Figure 2.** Bibliometric of digital entrepreneurship

Figure 3. Bibliometric visualization by year

RQ.1. Most journals contain articles about digital entrepreneurship

The results of the Systematic Review to answer the research questions RQ.1 are presented in figure 4.

Figure 4 explains that the journals containing articles that study Digital Entrepreneurship the most are the International Journal of Entrepreneurial Behavior and Research with a percentage of almost 30 %, followed by the Journal of Business Research at 15 %. The rest is almost evenly distributed at 7 to 13 % by Information Systems Journal, International Journal of Entrepreneurship, Canadian Journal of Administrative Sciences, International Entrepreneurship and Management Journal, International Journal of E-Entrepreneurship and Innovation, International Journal of Innovative Technology and Exploring Engineering and the Academy of Entrepreneurship Journal.
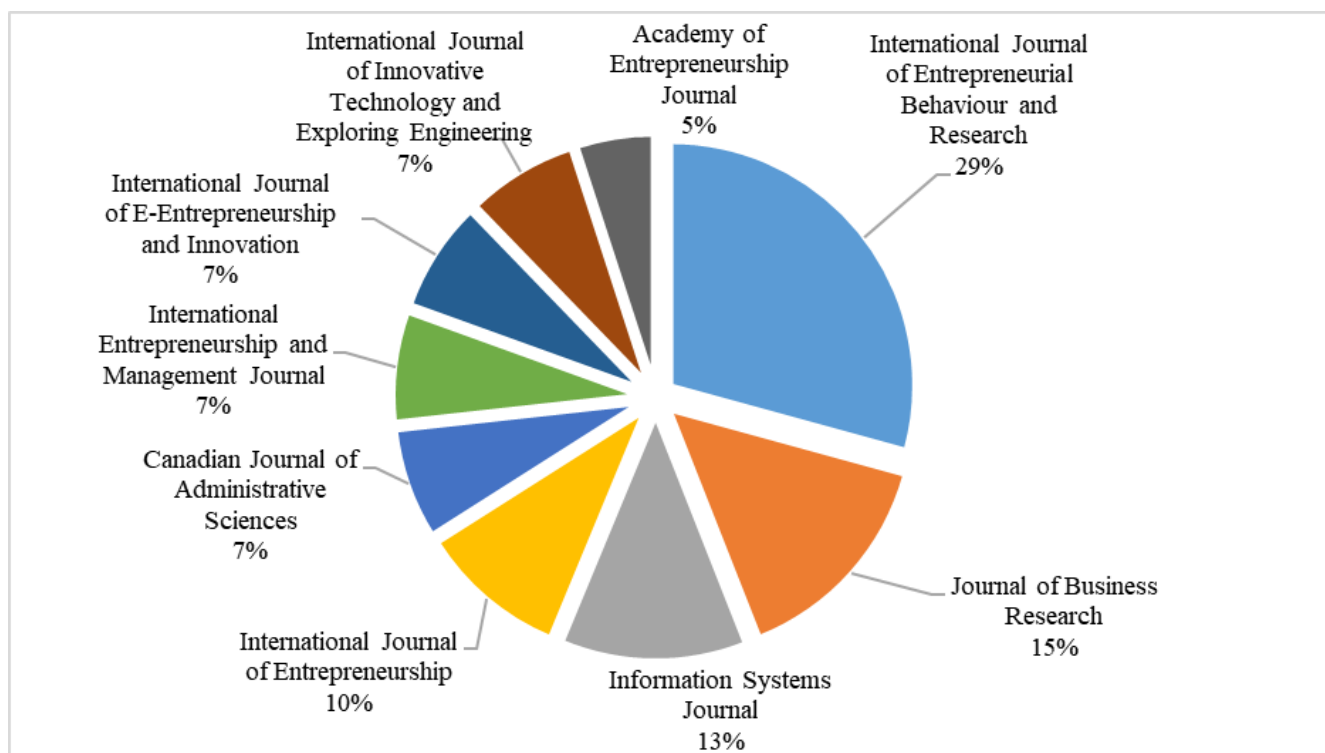

Figure 4. Journal of Digital Entrepreneurship Articles

RQ.2. Number of articles and citations on digital entrepreneurship topics in the last 5 years

The number of articles and citations on the topic of digital entrepreneurship in the last 5 years has increased quite well. Figure 5 explains the phenomenon. Figure 5 shows that from 2018 to 2021 there has been an increase in the number of articles on the topic of digital entrepreneurship. However, in 2022 it has not shown an increase from 2021. The initial assumption as to why this is happening is that in 2022 there will still be many articles that have not been published, bearing in mind that 2022 at the time this article was written still has several months left. The author believes that 2022 will also see an increase in the number of articles on digital entrepreneurship topics.
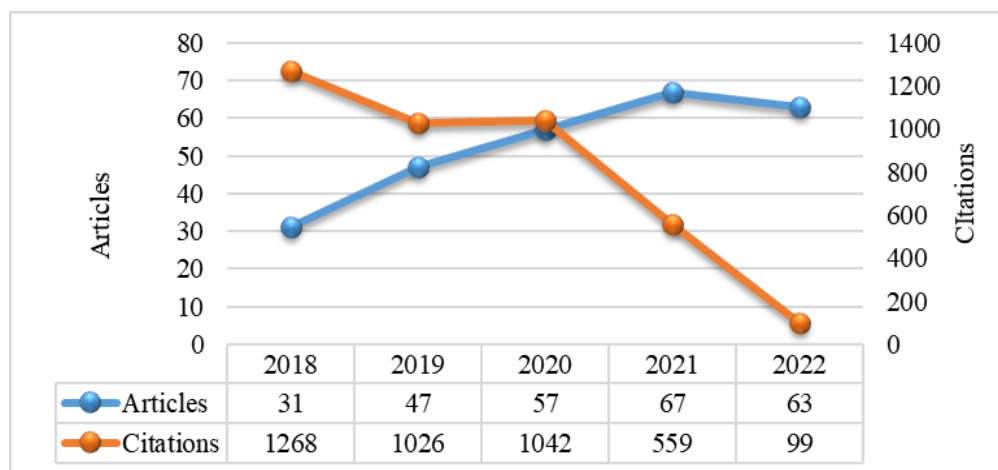

	2018	2019	2020	2021	2022
Articles	31	47	57	67	63
Citations	1268	1026	1042	559	99

Figure 5. Digital Entrepreneurship Citations

Furthermore, if we look at the citations or citations, it also shows a pretty good increase, of course, 2018 has the most citations of the following years, because 2018 can be cited by the author in the following years (2019, 2020, 2021 and 2022) which results in the number of citations became the highest from the following year. But this is not a problem, this has shown good trends from research on the topic of digital entrepreneurship.

RQ.3. The method used in the topic of digital entrepreneurship

The scientific method or approach that is often used in reviewing digital entrepreneurship topics is presented in figure 6. From figure 6 it can be concluded that the approach or method that other researchers often use to study digital entrepreneurship topics is qualitative, followed by a quantitative approach with numbers that are not adrift. far. After that, there is a conceptual method at 11 %, then a systematic review and mix method at 5 %. The main reason why more researchers use qualitative approaches in the topic of digital entrepreneurship should be studied specifically. However, according to the researcher, because the issue of digital entrepreneurship is closely related to social research, the reason for qualitative research is more desirable.
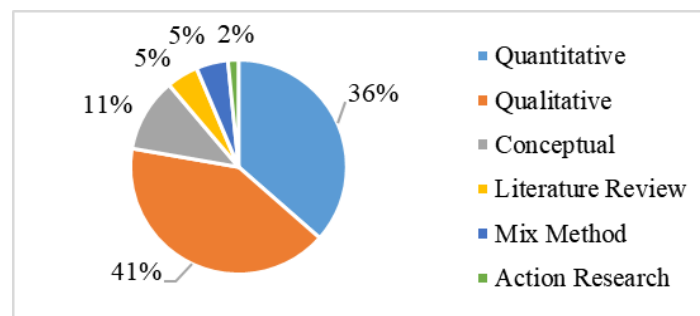

Figure 6. Digital Entrepreneurship Research Methods

In-depth observation is the main focus of the qualitative technique.[46] As a result, it is anticipated that using qualitative approaches to investigate digital entrepreneurship will produce a more thorough analysis of the issue. The realization that all outcomes of human action are influenced by internal features of the individual can be addressed by qualitative research that focuses on humanism, the human individual, and human behavior. [47] The internal aspects such as beliefs, political views, and social background of the individual concerned.

RQ.4. The author with the most citations on digital entrepreneurship

Seeing who are the authors in the field of digital entrepreneurship can make it easier for future researchers who want to research the same field by paying attention to the direction of trends being researched by researchers in the same field. Figure 7 shows several researchers who consistently research the topic of digital entrepreneurship. Antonio Ghezzi from Italy has the most cited articles, with over 180 citations over the last 5 years. Then followed by Sascha Kraus who is also from Italy, then there is Arati Srinivasan from the USA with almost 100 citations. The rest follow the top ten from Sanja Tumbas, Dennis M. Steininger, Albena Pergelova, Michael Ngoasong, Miguel Galindo, Vahid Jafari, and Ricarda Bouncken.
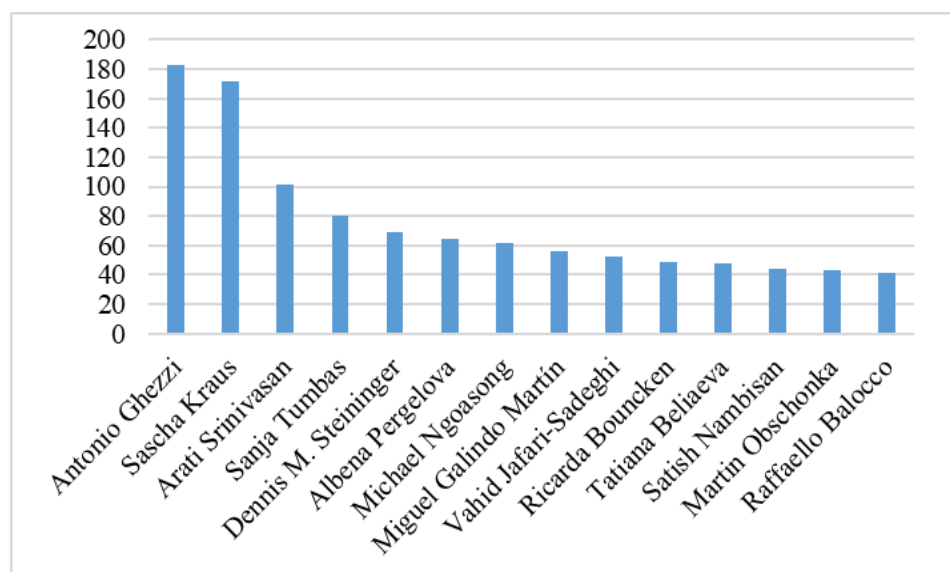

Figure 7. Author citation of Digital Entrepreneurship

RQ.5. The country with the highest number of articles on digital entrepreneurship

Figure 8 explains that the country of origin of the authors of articles with the most digital entrepreneurship topics comes from the USA, followed by the UK, China, Germany, Australia, and the Netherlands in the top five. This has at least a good correlation with the economies of these countries. The economies of these five countries are some of the best around the world, the research carried out at least has a positive impact on the course of entrepreneurial activities of these countries.
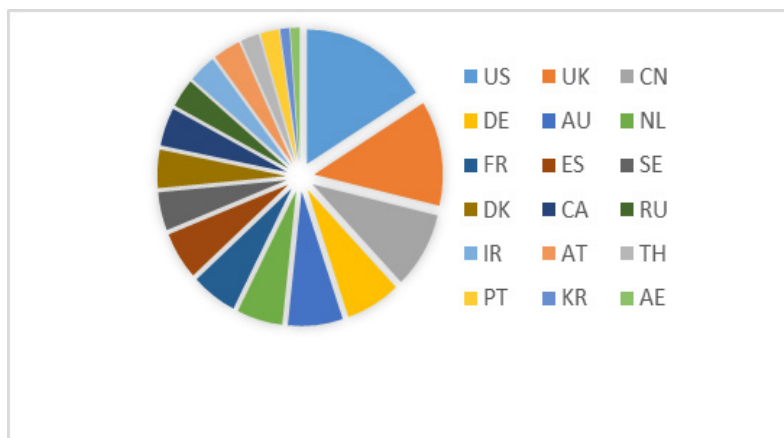

Figure 8. Country of digital entrepreneurship articles

Note: US=United States, UK=United Kingdom, CN=China, DE=Germany, AU=Australia, NL=Netherlands, FR= France, ES= Spain, SE=Sweden, DK=Denmark, CA=Canada, RU=Russia, IR=Ireland, AT= Austria, TH=Thailand, PT= Portugal, KR=South Korea, AE=United Arab Emirates

RQ.6. What research objectives are often sought in digital entrepreneurship research?

Figure 9 shows the percentage of research objectives from articles that have been analyzed. It can be seen that many studies on the topic of digital entrepreneurship direct research to obtain results related to economics. Many articles on digital entrepreneurship are indeed published in journals whose bases are purely economic or entrepreneurial journals. This is the main reason why in this systematic review the percentage of output or research objectives by pursuing economic or business-related results is very high. On the other hand, education, in this case, digital entrepreneurship education is still very small, less than one-fifth of the total number of articles that have been analyzed.

This can be good news for future researchers to raise the topic of digital entrepreneurship or digital entrepreneurship education to focus more on the direction of research in the Pedagogy/Model section of digital entrepreneurship. One of the key elements that contributes to the efficacy of education is pedagogy.[48,49] According to research, pedagogy is crucial to the education of digital entrepreneurs. Digital entrepreneurship education with effective pedagogy can generate and offer fresh ideas.[16]
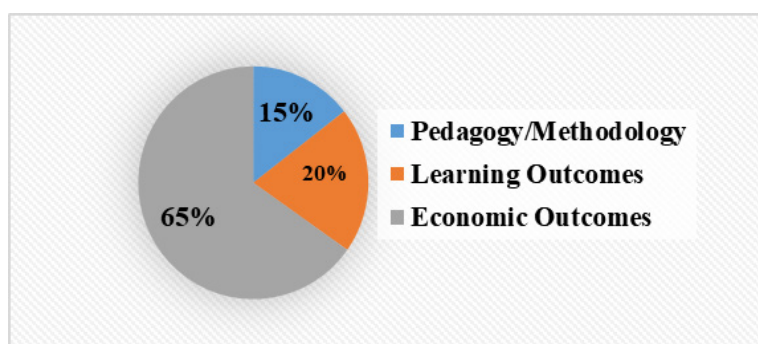
Figure 9. Purpose of Digital Entrepreneurship Articles

RQ.7. What findings are found in digital entrepreneurship research?

The systematic review in this study shows that there are many goals to be achieved when digital entrepreneurship research is carried out. Researchers in this case group into two focus objectives that are most often designed, namely to map the business ecosystem and the second to map what models are applied in the digital entrepreneurship approach and its relation to education or academia.

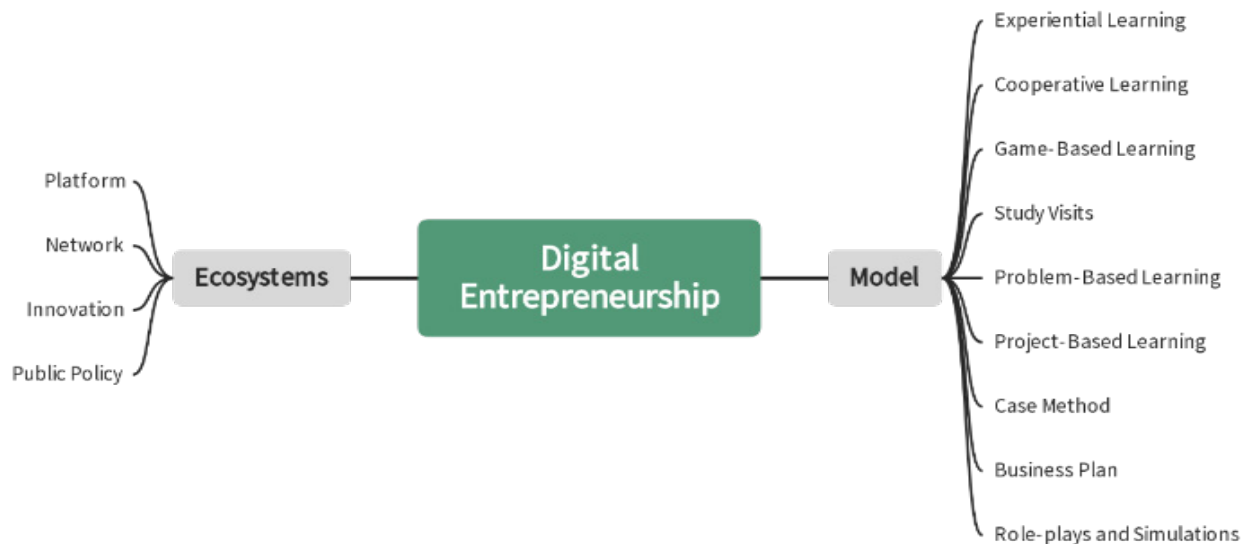**Figure 10.** Research Findings

Ecosystems

As befits an entrepreneurial ecosystem in general, the digital ecosystem is a place where every party meets, conducts transactions, carries out marketing strategies, and develops their business using optimization of data and information management with a solid system.

A series of benefits and goals of the digital ecosystem is interesting things for entrepreneurs in digitizing their businesses.[50] Not only as an effort to keep up with the development of the business era but fundamentally there are also many types of businesses that then depend on the existence of the digital ecosystem itself.

The digital payment process is a concrete example of a digital ecosystem product whose impact is quite massive. Besides being able to change consumer behavior, financial literacy in MSME business groups will also continue to increase. The proof is that as many as 85,5 % of small businesses that initially did not have a bank account are now familiar with banking products since they adopted digital payments.

Based on a survey, as many as 61 % of small businesses currently get a 10 % increase in transactions when they implement digital payments.[51] In addition, the monthly income experienced by 63 % of small businesses increased by more than 10 % after providing digital payment options.

Model

Digital entrepreneurship has experienced many variations of learning models or pedagogies.[46] The term "learning model" refers to the method of instruction that will be employed, which includes the goals of the lesson plan, the stages of the learning process, the learning environment, and classroom management. The goal of utilizing the learning model as a method for how learning is carried out is to aid students in developing themselves in terms of knowledge, concepts, value skills, and ways of thinking in order to increase their capacity to think clearly and wisely and to develop social skills and commitment. The results of the analysis to see the learning models that are often used in the topic of Digital entrepreneurship education can be seen in figure 10. These models include Work-Related Learning, Experiential Learning, Action-Learning, Active Learning, Cooperative Learning, Game-Based Learning, Problem-Based Learning, Case Method, Project-Based Learning, Business Plans, Role-plays and Simulations, Study Visits, Lectures by Role Models, E-Portfolio Based Pedagogies and Incubation Support.

RQ.1. Future research on digital entrepreneurship

This last research question is very useful for further researchers who are interested in studying the field of digital entrepreneurship. As for the results of the systematic review analysis obtained after concluding research proposals from several articles, several research proposals were obtained. First, with regard to the theme, there are several proposed points that were found: (1) Combining ideas about entrepreneurship with knowledge in the field of education to understand how a systematic educational process produces useful learning for students studying in the field of entrepreneurship, (2) Exploring the dynamics of learning based on real experiences, (3) examining the role and meaning in the cultural context of educational institutions or institutions, (4) studying developmental psychology to understand students' cognitive abilities and learning profiles, (5) developing critical reasoning related to methods in entrepreneurship education, (6) Measuring the effectiveness of methods in entrepreneurship education and evaluating teaching practices, (7) Assessing the

influence of social and economic trends, such as the sharing economy, circular economy, gig economy, or post-growth economy, on entrepreneurship and entrepreneurship education and (8) Assessing the development of characteristics entrepreneurship education as a progressive movement.

Second, concerning teaching methods in the entrepreneurship education process, several points of future research proposals have been successfully compiled, including (1) Finding specific methods for conducting research in entrepreneurship education, (2) Increasing and diversifying research samples, (3) More review and focus on longitudinal studies, (4) Replicate useful research in entrepreneurship education and use the results, (5) Examine entrepreneurship education in the context of developing entrepreneurship research in different sub-disciplines of entrepreneurship.

Third, opportunities for cooperation or collaboration. Collaboration in research occurs when numerous parties work together to undertake research. Academics from the same scientific discipline but with varying degrees of expertise in research methodologies or data ownership can collaborate. It could also be by those who come from different scientific fields but complement each other. The proposals related to the topic of collaboration in this article are as follows: (1) Forming research groups with researchers from outside the environment and different countries, (2) Collaborating to introduce more specific issues related to entrepreneurship education and publication in better-known journals, (3) Promote the field of entrepreneurship education through books and special seminars at well-known conferences, (4) Overcome the differences that arise between several sub-fields of entrepreneurship education research.

The systematic review identified 60 articles published between 2019 and 2024 that specifically address digital entrepreneurship in higher and vocational education. The results reveal significant growth in scholarly attention to this topic, particularly over the last five years, consistent with global trends in digitization and educational reform.

1. Trends in Publication and Citations: the International Journal of Entrepreneurial Behavior and Research accounted for the highest number of relevant publications (nearly 30 %). This confirms its role as a leading platform for discourse on entrepreneurship education. Citation trends also show an upward trajectory from 2018 to 2022, reflecting the growing relevance of digital entrepreneurship in the academic community. These findings align with Elia et al.[34] and Secundo et al.[35], who emphasize the increasing role of digital platforms in reshaping entrepreneurial ecosystems.

2. Research Methods and Focus Areas: qualitative methods dominated the literature (48 %), followed by quantitative (36 %), and conceptual (11 %) studies. This prevalence indicates a strong interest in understanding behavioral and contextual dynamics rather than generalizing patterns. This differs from earlier entrepreneurship research, which leaned heavily on survey-based quantitative data.[40] The high use of qualitative approaches suggests that digital entrepreneurship is still in an exploratory phase academically, with ongoing efforts to conceptualize it within education systems.

3. Geographic and Authorship Patterns: most studies originated from developed countries, notably the USA, UK, China, and Germany. These regions have strong digital infrastructure and policy support for innovation, which may explain their academic leadership. However, this geographical concentration reflects a research gap in emerging economies, including Indonesia, where digital entrepreneurship is growing rapidly but remains underrepresented in scholarly literature.

4. Dominant Themes: Ecosystem and Pedagogy: two recurring themes were identified: Digital entrepreneurial ecosystems, which emphasize the role of platforms, networks, and digital tools in enabling entrepreneurship. These ecosystems enhance market access and reduce operational costs but also require new competencies among entrepreneurs. Pedagogical models, including project-based learning, experiential learning, simulations, and e-portfolios. While many articles describe the application of these methods, few offer empirical evaluations of their effectiveness. This is consistent with the critique by Walmsley et al.[19], who argue that entrepreneurship education often lacks pedagogical rigor.

5. Underrepresentation of Educational Objectives: despite being an educationally themed review, less than 20 % of articles had a primary focus on pedagogy or instructional design. Most studies were economically oriented. This indicates a disconnect between entrepreneurship as an economic activity and entrepreneurship as a learning outcome in higher education. The lack of integration points to a need for future research that develops and tests structured, evidence-based instructional frameworks.

CONCLUSIONS

Digital entrepreneurship education in higher and vocational education is evolving but lacks a unified theoretical and methodological framework. The field is still characterized by conceptual ambiguity, with limited consensus on pedagogical strategies and learning outcomes. This situation reflects a broader need for systematic integration between entrepreneurship content and educational practice.

While research interest is increasing, it remains concentrated in economically advanced countries, leaving significant contextual gaps in low- and middle-income settings. The dominance of qualitative and conceptual

approaches signals an exploratory phase, but also indicates the need for more rigorous empirical designs that assess instructional effectiveness across diverse contexts. To move forward, the field must establish clearer definitions, refine its educational objectives, and encourage interdisciplinary collaboration. Future investigations should prioritize longitudinal studies, pedagogical validation, and global inclusivity to ensure digital entrepreneurship education becomes a robust and applicable discipline worldwide.

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AUTHORSHIP CONTRIBUTION

Conceptualization: Asmar Yulastri.
Data curation: Asmar Yulastri, Ganefri.
Formal analysis: Yudha Aditya Fiandra.
Research: Asmar Yulastri, Yudha Aditya Fiandra.
Methodology: Yudha Aditya Fiandra.
Project management: Feri Ferdian.
Resources: Ganefri.
Software: Yudha Aditya Fiandra, Feri Ferdian.
Supervision: Ganefri.
Validation: Asmar Yulastri, Ganefri.
Display: Yudha Aditya Fiandra.
Drafting - original draft: Elfizon.
Writing - proofreading and editing: Asmar Yulastri, Elfizon.