RESEARCH LANDSCAPE AND FUTURE RESEARCH AGENDA OF DIGITAL ENTREPRENEURSHIP: A BIBLIOMETRIC LITERATURE REVIEW

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ABSTRACT

This study emphasizes on to map the scientific production of Digital Entrepreneurship. To scientifically map this bibliometric method is the most prominent one. For this analysis, data was extracted from the Web of Science (WoS) from 2015 to 2022. This study covers mainly the number of Article Published, Annual Scientific Production, Most Relevant Sources, Most Relevant Authors, Authors' Production over Time, Country Scientific Production, and Most Global Cited Documents between 2015 to 2022. Bibliometric analysis reveals that (1) the basic theme of Digital Entrepreneurship is business model, opportunities, and management. (2) driving theme of Digital Entrepreneurship is technologies and innovation. (3) Niche themes of Digital Entrepreneurship are behavior, business, and the central part of creation. (4) antecedent is the emerging theme of Digital Entrepreneurship. While reviewing the article, qualitative methodology is more evident than conceptual and quantitative methodologies. Digital Entrepreneurship is the key theme in the economy, digital startups, i.e., Google, Facebook, Dropbox, Uber, etc., are now considered corporate giants. The heart of any new venture model is digital technologies. So, this field is now acquiring its own identity and legitimacy and becoming more interdisciplinary.

Keywords: Digital Entrepreneurship, Bibliometric, Business Model, Innovation.

INTRODUCTION

Digital Entrepreneurship plays a vital role in today's scenario. Nowadays, Google, Facebook, and Amazon have significantly impacted people's lives Kraus et al. (2018). It is an entrepreneurial activity that converts assets and services into digital (Din et al., 2018). Digital Entrepreneurship nowadays is treated prominently in the field of economic development. In this pandemic era, the cornerstone of Economic development is digitalization. In the beginning, google, amazon, Facebook, Dropbox, etc., were just digital startups, but they are now globally recognized as corporate giants. We can imagine how these corporate giants affect our lives and our economy. The digital startup is the locus of the industrial revolution, in which the digital economy is the most intrinsic aspect. In the whole world, there has been an enormous effect seen in the last decade due to new ways adopted by digital Entrepreneurship. Entrepreneurial processes have become more unpredictable and nonlinear due to their digitization, which has helped blur the lines between the various phases Huang et al. (2017).

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The scholars like Hull et al. (2007) and many more, digital entrepreneurs are exposed to many more difficulties in comparision to well established traditional business enteties. There is a vast difference in digital entrepreneurs' products, Marketing, and workplace compared to non-digital entrepreneurs (Kraus et al, 2019). And several opportunities have been created through Digitization (Hull et al, 2007). Entrepreneurship research primarily focuses on scholarly exploration of the uncertainties associated with entrepreneurial pursuits and how entrepreneurial actions tackle these uncertainties (Kirzner, 1979; Knight, 1979; McKelvie, 2011; Schumpeter, 1934). Majority of entrepreneurship theories have evolved around the uncertainties associated with Entrepreneurial actions (McMullen & Shepherd, 2006). In innovation and entrepreneurship, digital technologies infused several aspects that transform the nature of uncertainty and the way it deals with it in entrepreneurial processes. The two broad assumptions triumphed over by digitization: first the entrepreneurial processes and their outcomes relate to the product's structural boundaries. And the second is the process refers to entrepreneurial activities' boundaries.

The field of digital entrepreneurship is very dynamic and has evolved through several phases of lifecycle. The scholar's interest in this area were also un-uniform and challenged as earlier trends are emerging and fading. In 2000-2001, scholars coined this field as "internet entrepreneurship," but in 2004, it changed to e- and cyber entrepreneurship. Nowadays, we consider it "Digital Entrepreneurship." These terminologies switched because multiple disciplines were involving in overlap and industry was going through rapid change and transformation in product, process and phenomena that ultimately evolved this domain. One has to go through the entrepreneurial process in establishing any digital start-up. In this interdisciplinary development many stakeholders join together as the software required actually comes from the information technology discipline, while business model and strategy belong to management, and venture creation belongs to entrepreneurship. The notion of the researcher in the field of entrepreneurship is to understand (Ekbia, 2009; Kallinikos et al, 2013) the cornerstone of uncertainty which encompasses entrepreneurial processes, and they are also curious about the entrepreneurial actions which counter uncertainty. Indeed, uncertainty itself is the cornerstone of most entrepreneurial theories. In the recent decade, the Propensity of uncertainty in entrepreneurial processes and action has changed due to exponential innovation in digital technologies.

With the help of digital technology, we can exercise Digital entrepreneurship. These digital technologies have three distinct constituents – "digital artifacts, digital platforms, and digital infrastructure". Digital artifacts are related to the conceptualisation and development of products, services or processes that offers specific functionality or adds value to the diverse stakeholderss. These digital artifacts may be a software or hardware component in the physical device which operates on the digitally enabled platform or interface. The digital platform or interface are devised to cater a portfolio of different services and architecture shared, used and developed to host complimentary offerings, such as digital artifacts (Parker et al, 2016; Tiwana et al, 2010). Several digital platforms for entrepreneurs provide opportunities for developing the product and services (Zahra & Nambisan, 2011). The emphasis of the digital platform is on verifiability and agility. Entrepreneurs can seek valuable opportunities on the digital platform, in which they can develop complementary products or services. On the other hand, digital infrastructure plays a crucial role in supporting entrepreneurial activities. There are several emerging digital infrastructures, i.e., digital crowdfunding (e.g., Indiegogo), digital maker space (e.g., Bellingham), and forums of work execution (e.g., Stack Overflow) in pursuance of entrepreneurial initiatives.

Nowadays, digital technology is integral to entrepreneurial opportunities, and its roles are increasing. These opportunities may be in the form of outcomes or a process. Davidsson (2015)

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argues that in the framework of entrepreneurial opportunities, digital artifacts and platforms contribute to the outcome that is creation of new entrepreneurial idea or venture; on the other hand, digital infrastructure supports the process as external enabler too. Entrepreneurial initiatives are supposed to create a truly engaging value proposition and a set of entrepreneurial activities that are not bounded by the collection of activities and duration specified in any conventional business plan. As per the point of view of "effectuation" (Sarasvathy, 2001), There are several personal individual factors like identity, beliefs, skills, capacities along with other qualities of the entrepreneur individually or collectively of entrepreneurial team which contribute to the venture creation and growth. These factors has continuously been the area of investigation among entrepreneurship research community.

In reference to the growing interest and phenomenological importance of digital entrepreneurship, we are positing the following research questions. These research questions are important from the persopective to understand the scholarly trajectory till date and future directions. The undertaken research questions are as follow:

1.What are the publication and citation trends in Digital entrepreneurship?
2. Who are the most contributing authors, institutions, and countries in digital entrepreneurship?
3. Which one is the most cited article and journals related to digital entrepreneurship?
4. What is the methodological and geographical spread in digital entrepreneurship research?
5. What is the collaboration network in the research of digital entrepreneurship?
6. Which are the most trading themes and topics in published research on digital entrepreneurship?
7. Which is the emerging research avenue that contributes to pursuing in the future?

The study is intended to contribute to the digital entrepreneurship knowledge strem in three ways: First, it helps to understand the complex layers of concept and contributes to the ongoing discussion by synthesizing the different ways digital entrepreneurship is conceptualized and how it is reflected in the existing literature from the bibliometric perspective. In particular, intended to facilitate insights into the nature and content related to the topic. Second, the finding of bibliometric analysis act as the foundation for further scholarly questions and help in developing future research direction to excel in the literature on digital entrepreneurship. The remainder of the article is described in the subsequent section, which mainly discusses the methodology adopted, followed by findings obtained from performance analysis and science mapping. At the same time, suggested future research avenues are based upon the findings. Summary for key takeaways is described while the article concluded.

METHODOLOGY

The primary role of bibliometric analysis is to contribute to library science Pritchard (1969). The bibliometric method is widely used in the research area of entrepreneurship, innovation, and strategy, while it declines in organizational behavior and psychology. In the meantime, there is a lack of guidelines for conducting structured literature reviews via the bibliometric method. Zupic & Cater (2015) argues that there are five bibliometric methods: citation analysis, co-citation analysis, bibliographical coupling co-author analysis, and co-word analysis. The first three use citation data to measure influence and similarity.

In contrast, co-author measures the collaboration between co-authors, and co-word measures the connection between document title, keywords, and abstract Zupic & Čater (2015). Here bibliometric methods are used to portray the structured image of the scientific field with the help of bibliographic data extracted from the publication database. This bibliometric study summarizes

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quantitative data from the existing literature. Indeed, here bibliometric analysis talks about authors and co-authors, the most relevant affiliation, author's production over time, keywords analysis, etc. The researchers conducted a bibliometric study from 2015 to 2022. On 04th March 2022, Researchers extracted bibliographic data from the Web of Science (WoS) database. The researchers consider "*Digital Entrepreneurship*" as a keyword for search criteria. WoS was accessed worldwide for quantitative analysis because of its inter-disciplinary and peer-reviewed research databases (2) Dy et al. (2017).

In this systematic literature review, we are following PRISMA Model for reporting, which includes 4 stage flow diagrams, shown in fig 1. In 1999 PRISMA basic model was developed. PRISMA model is a transparent and well-structured framework (3). Concerning the PRISMA framework, the process of selection comprises four steps: - (1) identification of research paper according to keyword, (2) Abstract and full-text screening, (3) full-text articles assessed for eligibility, and (4) studies included in the qualitative synthesis. To get a deeper and richer understanding of the bibliometric outcome of the related question, a visual mapping of bibliographic data will help (4); for visual mapping, the researcher's using R studio (Biblioshiny Tool) and VOS Viewer.

Searching on the Web of Science (WoS) database was conducted with the keyword "*Digital entrepreneurship*." *With a* "*digital entrepreneurship*" concentric theme, we found 144 articles. We narrowed our analysis down and portrayed it in the PRISMA framework. After following inclusion and exclusion criteria, move to a full-text review of 139 documents. We have used R Studio (biblioshiny tool), Microsoft excel, and VOS viewer for performing bibliometric analysis. These tool helps to analyze the document as per our requirement in the study.

FINDINGS

Publication and Source Types

The research area of digital entrepreneurship is very vibrant; as of 4th March 2022, the WoS database consists of 139 publications after due exclusion mentioned in the PRISMA framework. Table 1 and figure 2 illustrate detailed information by classifying the various articles published under the theme of digital entrepreneurship. Among 139 publications, there are 123 articles, eight review articles, four editorial materials, two book reviews, and two corrections. Therefore, in 139, only articles account for 86.80% of the entire publication. Editorials, reviews, and other articles published in digital entrepreneurship are equally valuable to the research Table 1 and Figure 1.

Table 1
PUBLICATION TYPE

Publication Type	No of Publication	% (N=139)
Articles	123	88.49
Review Articles	8	5.76
Editorial Materials	4	2.88
Book Reviews	2	1.44
Corrections	2	1.44
Total	139	100

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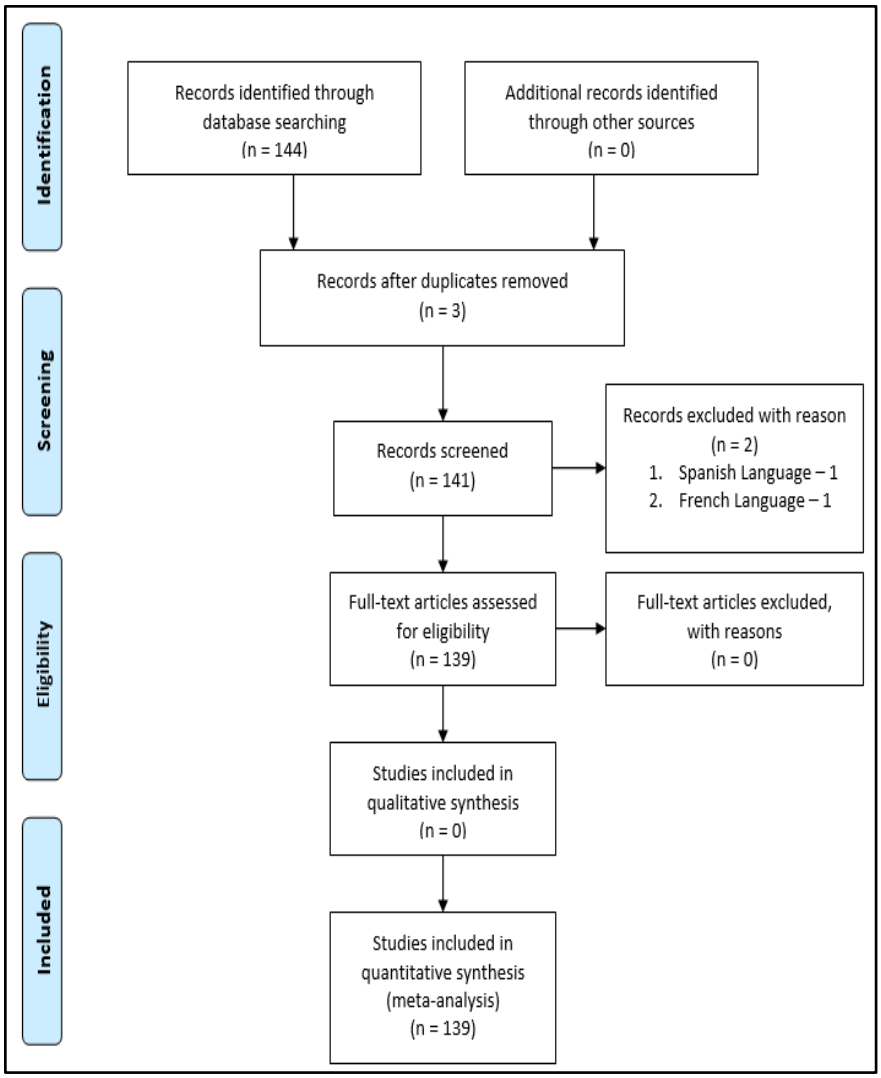

FIGURE 1
(SOURCE: - AUTHORS OWN COMPILATION)

Year of Publications – transformation in articles publication

The WoS database reveals that the article's keyword "*Digital Entrepreneurship*" has been prominently used for the last eight years. One-one articles reported with the digital entrepreneurship-centric theme in 2015 and 2016, but post-pandemic, a massive surge in the publication of articles. The number of publications has more than doubled between 2020 and 2021. In 2021 maximum number of publications has been reported all the year. Thus, it reveals that academicians have shown enhanced research interest in digital entrepreneurship due to the pandemic. The annual growth rate of scientific production is 49.89%, a very high growth rate Table 2.

Table 2
YEAR OF PUBLICATIONS

Year	No. of publications (P)	Publications % (N=139)	Cumulative %	No. of cited publication (CP)	Citations (C)	C/P	C/CP

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2015	1	0.72	0.72	1	2	2.00	2.00
2016	1	0.72	1.44	1	14	14.00	14.00
2017	5	3.60	5.04	5	800	160.00	160.00
2018	11	7.91	12.95	11	349	31.73	31.73
2019	18	12.95	25.90	18	443	24.61	24.61
2020	27	19.42	45.32	25	453	16.78	18.12
2021	57	41.01	86.33	27	225	3.95	8.33
2022 (Till 4th March	19	13.67	100	9	24	1.26	2.67
Total	139	100.00		97	2310	16.62	23.81

Here, table 2 elaborates that the overall number of citations (2310), the average number of citations per publication (160.00), and the average number of citations per cited publication (160), 2017 is the most influential year throughout the journey. In the first quarter of 2022, published 19 articles, so we can expect the surge to continue in the future. The covid-19 pandemic opens a new window for digitalization.

Subject Area

Table 3 elaborates on published articles – top five subject areas with a digital entrepreneurship-centric theme. Business economics is the most prominent research area that published articles with the digital entrepreneurship-centric theme, followed by computer science, information science, etc Table 3.

Table 3
SUBJECT AREA

Subject Area	No of publication
Business Economics	90
Computer Science	21
Information Science Library Science	20
Public Administration	20
Science Technology Other Topics	16

Distribution of Publication – Country's Scientific Production and Most Cited Countries

Figure 2 elaborates the top 10 contributing countries in total published articles since 2015. The articles published with a digital entrepreneurship-centric theme have been contributed by many countries worldwide. It shows that the UK is the most influential country with 47 publications further, Germany, China, Italy, USA are the following four most significantly contributing countries accounting for 14.42%, 11.35%, 8.59%, 8.59%, 8.28%, respectively. Unfortunately, India did not come in the top 10 most contributing countries. India has contributed only seven articles which account for only 2.15% Figure 2.

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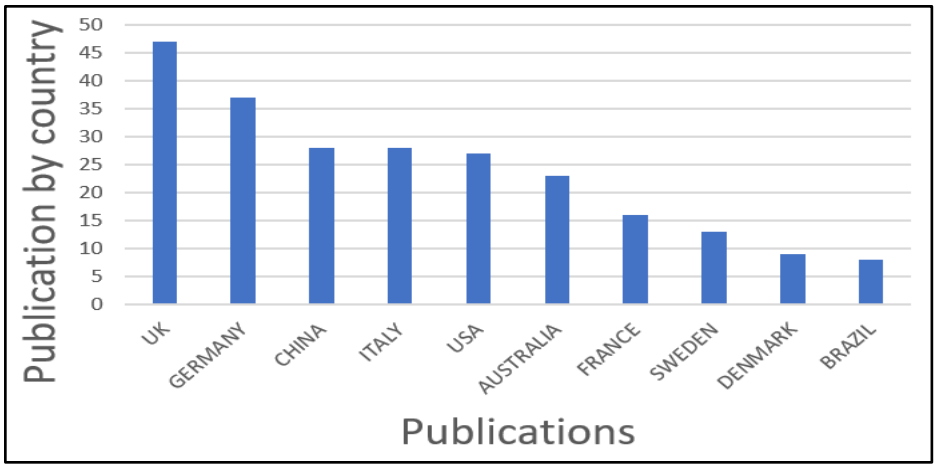

FIGURE 2
TOP 10 COUNTRIES CONTRIBUTING TO THE PUBLICATION

Table 4 elaborates the top 10 cited countries in which the USA is the most cited country with a total of 818 citations, followed by Italy, the UK, France, Australia, accounting for 347, 273, 176, and 158 Table 4.

Table 4
TOP 10 CITED COUNTRIES

Country	Total Citations	Average Article Citations
USA	818	58.429
ITALY	347	19.278
UNITED KINGDOM	273	16.059
FRANCE	176	22
AUSTRALIA	158	14.364
GERMANY	144	9
FINLAND	103	34.333
CHINA	66	5.077
SWEDEN	43	14.333
NETHERLANDS	33	11

Authorship

Table 5 elaborates on the number of authors per publication. The maximum number of articles published has two authors, accounting for 33.81%. Further followed by three authors' publications (24.46%), four authors' publications (18.71%), one author publication (13.67%), five authors' publications (8.63%), and six authors publications (0.72%). Hence it has been noticed that digital entrepreneurship centric publication has both single and multiple-authored articles Table 5.

Table 5
NUMBER OF AUTHORS PER PUBLICATION

Authors count	No of publication	% (N=139)

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1	19	13.67
2	47	33.81
3	34	24.46
4	26	18.71
5	12	8.63
6	1	0.72
Total	139	100

Figure 3 elaborates that Antonio Ghezzi is the most prominent author in digital entrepreneurship; he has contributed seven papers to this field. His research articles contribute mainly to understanding "*Agile Business Model Innovation*" *and* "*Lean Startup Approaches*." *His most cited paper is* "*Agile Business Model Innovation in Digital Entrepreneurship: Lean Start-up Approaches.*" Professor Ghezzi has argued that it is worth investigating the theoretical and practical relationship between approach and tools. Angelo Cavallo is the second most prominent author; Ghezzi and Cavallo collaborated on five published articles on digital entrepreneurship. The third most contributing author is Alexander Brem; he has contributed three papers to this field. His research articles contribute mainly to "*Business models innovation*" Figure 3

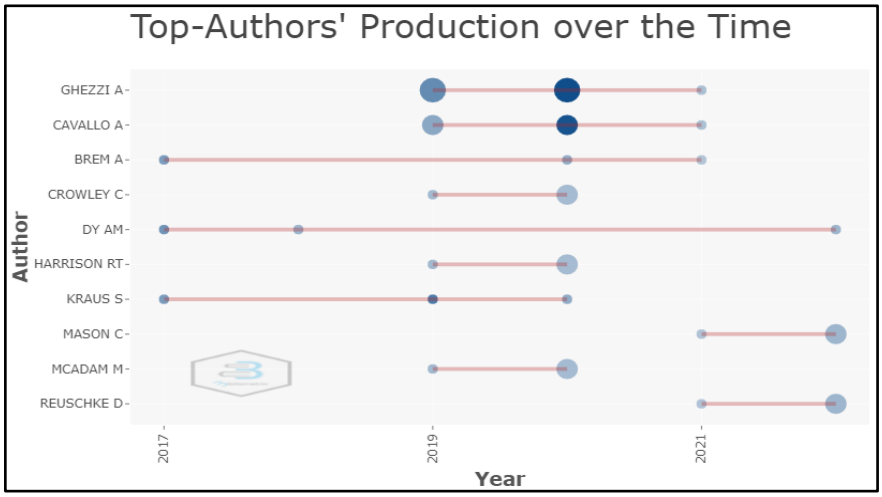

FIGURE 3
TOP 10 AUTHORS PRODUCTION OVER TIME

Collaborating with various global researchers is crucial for developing any research field, as has been argued by Baker et al. (2020); Hassan et al. (2022). Figures 4–6 show the collaboration among academicians using an analysis of the country, authors, and organization. In collaboration, the most influential author is Alexander Bream, followed by Sascha Kraus. The strongest co-authorship link is between Sascha Kraus, Alexander Bream, M Peter Bican, Sandro Battisti, Clemens Giselbrecht, Susanne Durst, and Chris Richter. They all share the same co-authorship link strength of four, as shown in figure 4. The most influential organization in collaboration is the Queensland University of Technology, University of Bayreuth, and Jönköping International Business School, with a four-link strength, as shown in figure 5. The most influential country in collaboration is England, followed by Germany, the USA, Australia, China, and Italy. The further most robust co-authorship link between England, China, the USA, Italy, Finland, France, Canada, Wales, Spain, Scotland, South Korea; of them have the same co-authorship link strength of 16, as

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shown in Figure 4-6.

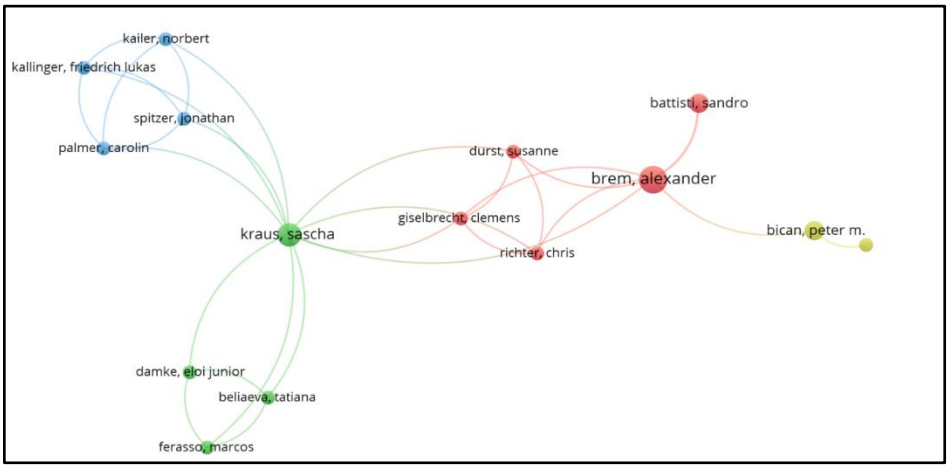

FIGURE 4
NETWORK VISUALISATION MAP OF THE CO-AUTHORSHIP

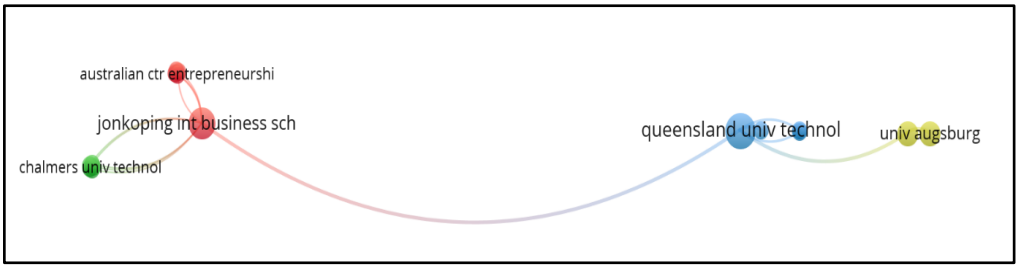

FIGURE 5
NETWORK VISUALIZATION MAP OF THE CO-AUTHORSHIP

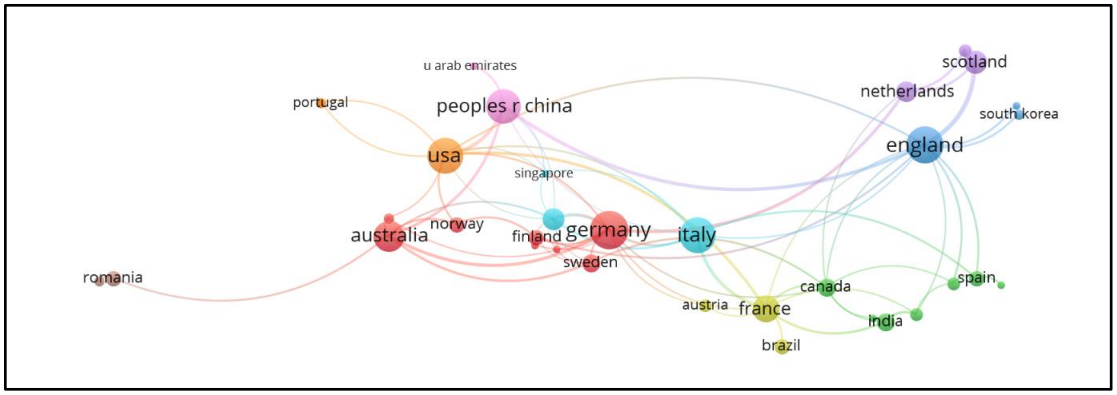

FIGURE 6
NETWORK VISUALISATION MAP OF THE CO-AUTHORSHIP

Most Relevant Affiliations

Table 6 shows the most relevant affiliations which contribute to digital entrepreneurship.

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The authors affiliated with the Polytechnic University of Milan, Italy, have the highest number of published articles (7), followed by the Queensland University of Technology, Australia (5) Table 6.

Table 6
MOST RELEVANT AFFILIATIONS

Institution	Number of publication	% (N=139)	Number of the cited publication	Number of Citation	Number of Citation / Publication	Number of Citation / Number of the cited publication
Polytechnic University of Milan, *Italy*	8	5.76	7	214	26.75	30.57
Queensland University of Technology, Austrilia	4	2.88	3	42	10.50	14.00
The University of Edinburgh, Scotland	3	2.88	3	51	12.75	17.00
Jönköping International Business School, Sweden	3	2.16	3	59	19.67	19.67
University of Glasgow, Scotland	3	2.16	2	23	7.67	11.50
University of Nottingham, *England*	3	2.16	2	138	46.00	46.00
Dublin City University, Ireland	3	2.16	3	120	40.00	40.00

Citation Based Analysis

A popular way to measure the impact of any research article is to check the degree to which it is contributing to the scholarly converstation among fellow research community (Bornmann & Daniel, 2007) . Table 7 illustrates the citation metrics of the 139 documents from the year 2015 to 2022. Over eight years, the total number of citations is 2310, resulting in 288.75 citations per year and 16.62 citations per document.

Table 7
CITATION MATRIX

Metrics	Data
Timespan	2015 – 2022
Total Document	139
Total Authors	336
Total Citation	2310
Average citation per document	15.94
Document per authors	0.423
Authors per documents	2.37

The analysis of the top 20 publication lists with maximum citations between 2015 and 2022. Bibliographic data reveals that 69 articles out of 139 have equal or more than five citations. Top cited published articles discuss the issues that affect the entrepreneurial ecosystem, how digital entrepreneurship can foster in Start-ups and SMEs, and the implementation of lean and agile business models through digitalization in start-ups and SMEs. These published articles revolve around the diversification of areas in entrepreneurship.

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The article "*Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship*," authored by Nambisan (2017), has a maximum citation of 423 in Scopus. Nambisan argued that due to the infusion of new digital technologies, i.e., cloud computing, 3D printing, and data analytics, the nature of uncertainty in the entrepreneurial process and its outcome are transformed. These new digital technologies changed the way of tackling uncertainty. He also argued that careful consideration is required while opting for digital technologies based on their unique characteristics and shaping entrepreneurial intentions. Researchers describe three well-defined digital technology elements – digital artifacts, platforms, and infrasture. Earlier findings presupposed that we have a stable or discrete set of boundaries to underlie entrepreneurial opportunity Davidsson (2015); Short et al. (2010). Nambisan also argued that a specific factor induces process flexibility in digital entrepreneurship but could not consider the different methodological approaches to study this phenomenon. The design science perspective would help in developing theories. Peffers et al. (2007) proposed that research methodologies in design science will be invaluable in developing theories.

The concept of digital user citizenship in the digital entrepreneurship ecosystem is an important aspect that stimulates the policymaker in education to rethink which skill set is required to link the skill of digital entrepreneurship in the digital economy Sussan & Acs (2017). Sussan & Acs proposed a framework to integrate knowledge from management information systems and marketing. They also argued that converting knowledge into technology and technology into consumer products are not automated Arrow (1962). It requires an agency to complete the production function and fill the market gap. They have not addressed digital skills in-depth, which is critical for preparing for different types of the digital marketplace Le Dinh et al. (2018).

Third-party digital platforms help entrepreneurs upgrade their SMEs with their services and functionalities, although they have limited resources and inadequate capabilities (Li et al., 2018). Cha et al., 2015 argued that previously treated managerial capabilities as static and considered them an antecedent to organizational transformation. But Li et al, 2018 portray managerial capabilities in managerial cognition and social networks. They also argued that we could address the other aspects, i.e., organizational structure and routine for the digital transformation of SMEs in the future, along with their interaction with capability building.

Women were affected by intersectional positionality while obtaining entrepreneurial resources in digital companies. Dy et al, 2017 also argued that offline positionality is the major constraint on entrepreneurial potential during online space exploration. Herewith the help of an analytical framework, they critically evaluate the assumptions of intersectionality Crenshaw (1990); May (2015) and positionality Anthias (2001a); Anthias (2006); Anthias (2007); Anthias (2008); Anthias (2013). They also explore the attribution of socially constructed disadvantages within digital space. Through the intersectional approach, it is evident that the experiences encountered by women are also different based on their color. Whiteness served as an established and unquestioned social status in the western environment. As a result, it can distinguish White women from the others qualitatively Li et al. (2018). A close relationship between class and history plays a significant role in affecting entrepreneurship during the accumulation of resources Jayawarna et al. (2014a). The papers also confirm the argument of Fraser et al. (2015); Jayawarna et al. (2014b) that if a potential entrepreneur has a high level of educational background, financial stability, experience in business, and contacts in the industry, they are more likely to create a new venture and the chance Anthias (2001b) of getting endure and grow. Dy et al., 2017 also argued about the prospects of this study ensuring getting visibility of marginal individuals. The futuristic intention of research must be about exploring whether working-class women are getting benefits

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from online opportunities or not Jackson (2009).

Digital business model, digital entrepreneurship process, platform strategies, digital ecosystem, entrepreneurship education, and social digital entrepreneurship are the six areas of extant literature Kraus et al. (2018). In their paper, Kraus et al. (2018) argued that Guthrie (2014) failed to explore the possible outcome of their study concerning structured research of digital entrepreneurship training and education. They also enlightened that Nichols et al. (2017) lack further research avenues. They only describe the supporting role of the academic library to entrepreneurship and digital humanities on the campus. Kraus et al. (2018), in their paper, argued that, according to Hsieh & Wu (2019), entrepreneurs treat the digital ecosystem as a potential value. Entrepreneurs consider it not only for the business model but also as an innovative digital platform that provides an ecosystem where they can try out their ideas and contribute to the digital solution. According to Davidson & Vaast (2010), digital entrepreneurship refers to pursuing opportunities based on digital platforms and communication technologies. Still, Kraus et al. (2018) differ slightly and argue that the agent who leverages digital platforms is seeking and acting on the opportunities available in the marketplace that leads to moving the economy closer to the technological frontier. This paper emphasizes future research on solving the issue to achieve organizational transformation with institutional entrepreneurship by the organization. Margiono et al. (2017) argued about a deeper understanding of the essential mechanism and outcomes of the strategic platform and digital social platform. Exploring the business model within digital entrepreneurship is also evident because it requires more clarification about when, how, and why a company decides to pursue a moderate or extreme digital business model. Digitalization will accelerate with the development of technologies, advanced analytics, and better infrastructure, leading to a new business model. To achieve this goal, we have to accept the importance of a robust digital ecosystem.

Keyword Analysis

We do a "*keyword analysis*" after summarizing the number of articles published and an overview of the authors and countries. Using the text mining application VOS Viewer, Figure 7 depicts the research streams generated by this enormous number of publications. Here, the combination of "*technology and digital entrepreneurship*.", "*Digital economy and digital entrepreneurship*" demonstrate the strong relationship between them Figure 7.

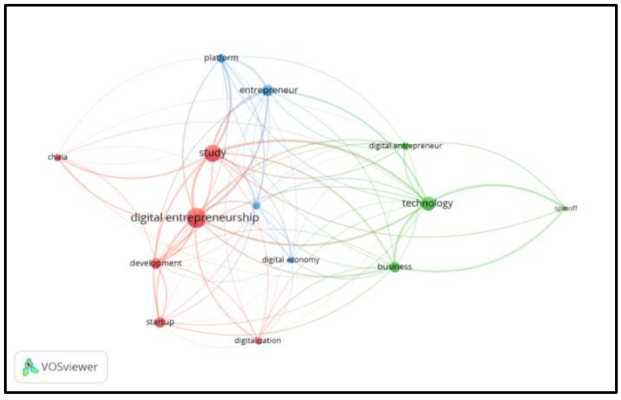

FIGURE 7
KEYWORDS CLUSTERING

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DISCUSSION & CONCLUSION

This research aimed to use a bibliometric technique to create a credible picture of the scientific community—numerous articles written to gain a broader perspective on digital entrepreneurship. From 2015 to 2022, we looked at the most relevant digital entrepreneurship publications. Scopus has 139 publications in its database as of today. With 57 publications produced between 2015 and 2022, 2021 was the most productive year.

According to the Scopus database, the most referenced article is Satish Nambisan's (2017) study titled "*Digital Entrepreneurship: Toward a Digital Technology Perspective on Entrepreneurship*." Furthermore, with 800 citations, 2017 was the most impactful year, with the highest citation per publication. The co-authorship relationship between England and Germany, on the other hand, is the strongest. Article publishing is growing at 49.89 percent each year, demonstrating the importance of ongoing research. Overall we may inteprate that the scholarly work in this area is growing and different publication outlets are showing interest to contribute in the converastation related to digital entrepreneurship.

Due to the immergence of digital technologies in every aspect of human life, the new era of entrepreneurship has also emerged – popularly termed as digital entrepreneurship. In this new phenomena it is very much evident that the old approach to chase entrepreneurial possibilities, opportunity and its exploitation are progressively being challenged and refashioned. Research studies are increasingly raising the research questions, intended to improve our understanding of a more pressing issue in entrepreneurship: the nature of entrepreneurial uncertainty and how entrepreneurs deal with it. Business Models are under examination as the digital business models are disrupting the entire ecosystem, entrepreneurial process are under inclusive reform under the phenomena of digital entrepreneurship process, conventional strategies are majorly under high challenge to choose the right platform strategy, many new age – virtual as well as physical infrasture, institutional support, incubation support are contributing to digital ecosystem, entrepreneurship education, and social digital entrepreneurship were the six categories that emerged from the current literature. From literature assessment, digitization has resulted in a significant shift in how entrepreneurs do business. In reality, until recent breakthroughs in digital technology, many new types of enterprises did not exist. Digital entrepreneurship presents a wide range of challenges. Technological infrastructures are constantly evolving, and digital technology continues to provide society with new advances.

The comparision of prior research and current research on entrepreneurship exhibits that there is significant difference in the way digital start-ups are evolving. In the early phases of their growth they are experimenting with Business Model Innovation initiatives, trying to co-create and co-opetrate in environments with varying levels of environmental dynamism. Startups are taking up various roles in the ecosystem development as well, and responsibly contributing to the dynamic nature of ecosystem at large. Agility become a significant trait among the digital startups, the study of Ghezzi & Cavallo (2018) argued that Lean Start-up approaches (LSAs) might be a kind of stragey to attain agility that operates at the strategic and business model levels. In other words, LSAs are flexible approaches for developing new business models.

In the existing literature, researchers have not addressed the features of the agents in comparison to those who do not work in a digital environment as they construct digital entrepreneurship. More research is needed to explore the differences in risk-taking, opportunistic, and other psychological attitudes and behavior between digital and non-digital agents. A more in-depth examination of various levels of users' digital abilities and their relationships with various

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markets will be an essential topic of research to explain how digital entrepreneurs may use these users' talents to establish a successful business model.

The relationship between the sharing economy and entrepreneurship needs greater research and development to comprehend better the different choices the sharing economy may provide to the study of start-up success in this sector. A closer look at the relevance of the social component for both customers and businesses looks promising. While in the entrepreneurial literature, there is a shortage of digital economy-specific studies. Sussan & Ace, 2017 offer a digital entrepreneurship ecosystem approach that integrates management information systems and marketing expertise to solve this gap. Within the digital entrepreneurship ecosystem, digital user citizenship is particularly crucial for encouraging policymakers in education to reconsider what digital skillsets should be encouraged to relate skills to entrepreneurship in the digital economy. Policy reforms that imply the internet may be a "great leveller" for social disparities should be approached with caution, lest they become part of modern evangelical discourse extolling entrepreneurship's promise for the underprivileged and poor. There are more significant public policy implications in digital entrepreneurship studies. For example, in areas like public health, transportation, and education, big data analysis has aided individuals and charitable groups identify societal issues that lead to entrepreneurial possibilities. Finally, as products and services across sectors rapidly digitize, digital technologies increasingly infuse entrepreneurial potential in these marketplaces.

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