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# Digital entrepreneurship research: A systematic review

Justin Paul [a,b,*], Ibrahim Alhassan [c], Nasser Binsaif [c], Prakash Singh [c]

[a] University of Puerto Rico, USA & Visiting Professor-University of Reading, UK
[b] Former Faculty Member, University of Washington, USA
[c] College of Administrative and Financial Sciences, Saudi Electronic University, Saudi Arabia

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ABSTRACT

Several extant contemporary works of literature diagnose the lack of sound theoretical underpinnings of the Digital Entrepreneurship phenomenon. This paper provides a systematic literature review offering insights on the Digital Entrepreneurship phenomenon to generate insights into recent developments in the field. A systematic literature review was conducted to enhance the understanding of the phenomenon. Web of Science and Scopus were employed to identify, extract, select, and review related articles using search keywords. Finally, articles from 25 SSCI-indexed journals were selected for this study. This systematic literature review identifies current research paths on digital entrepreneurship categorizing the key findings into themes, contexts, and methodologies using the TCM framework. Finally, we propose a conceptual model that presents how a traditional enterprise can transform into a digital enterprise. The study contributes to the understanding of the conceptualization of Digital Entrepreneurship by laying the groundwork for further research development encouraging researchers to investigate this phenomenon.

## 1. Introduction

While contemporary studies withstand to highlight the prominence of Digital Entrepreneurship, the chronological terminology of this arena is chronically unnoticed. Digital Entrepreneurship predisposes to be deliberated a new phenomenon regardless of budding in the early 1990s. The continuing articles that defined the phenomenon of Digital Entrepreneurship (Kollmann, 2006; Hull et al., 2007; Davidson & Vaast, 2010; Sussan & Acs, 2017; Nambisan, 2017; Le Dinh et al., 2018) disclosed that this phenomenon was frequently assumed in the same way, although a positive advancement over time can be acknowledged. Kollmann (2006) defined the phenomenon of Digital Entrepreneurship: "E-entrepreneurship refers to establishing a new company with an innovative business idea within the net economy, which, using an electronic platform in data networks, offers its products and/or services based upon a purely electronic creation of value. Essential is the fact that this value offer was only made possible through the development of information technology". Further, Hull et al., (2007) defined this phenomenon: "Digital Entrepreneurship refers to technological advancement with new ways of establishing and performing business (Hull et al., 2007)". Furthermore, Davidson and Vaast (2010) expanded this definition to: "Digital Entrepreneurship as the pursuit of opportunities based on the use of digital media and other information and communication technologies" followed by Sussan and Acs (2017) definition: "Digital Entrepreneurship is the combination of digital infrastructure and entrepreneurial agents within the context of both ecosystems". Additionally, Nambisan (2017) defined it as the platforms, infrastructures, or things that employ computing power on universal public networks are known as digital technologies and the intersection of digital technologies and entrepreneurship. Likewise, Le Dinh et al., (2018) extended this definition: "Digital Entrepreneurship has ascended over technological resources like the Internet and Information & Communications Technologies (ICT)." The development of digital platforms, and related entrepreneurial environments have headed a fresh and theoretically significant perspective for entrepreneurship. The advent of innovative and potent digital technologies, digital platforms and digital infrastructures has disrupted innovation and entrepreneurship in considerable ways. However, the benefits to entrepreneurs associated with their participation in these entrepreneurial environments are well understood, and the associated technological disruptions leading to Digital Entrepreneurship are yet to be studied (Nambisan, 2017; Nambisan et al., 2019; Nambisan & Baron, 2021).

* Corresponding author.
*E-mail addresses:* profjust@gmail.com, Justin.paul@upr.edu, j.paul@reading.ac.uk (J. Paul), ialhassan@seu.edu.sa (I. Alhassan), nbinsaif@seu.edu.sa (N. Binsaif), p.kishore@seu.edu.sa (P. Singh).

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With the digital progressions enabled by disruptive technological changes in the global business landscape over the preceding decade, innovative digital technologies had occurred throughout the entrepreneurial progression, which was hunted and then implemented and grasped by entrepreneurs globally (Autio, 2018). Through the usage of novel digital tools, digital capabilities, and skills can be developed to further enable the performance of diverse entrepreneurs. Topical research studies in entrepreneurship and digital innovation have shown that digital technology enables businesses at different phases of their evolution and consequently, Digital Entrepreneurship has advanced into an increasingly important research area and is a contemporary issue with both research and practical implications (Ghezzi & Cavallo, 2020; Kraus et al., 2018; Nambisan, 2017). The digitalization of entrepreneurial processes has helped individuals and organizations to disrupt the boundaries of physical and digital businesses in accomplishing new milestones in the world of business (Huang et al., 2017). Hence, it became very imperative to investigate this phenomenon in more detail by employing a review of related literature using a better research approach.

However, Zaheer et al., (2019) provided insights into recent developments in the field of Digital Entrepreneurship using the meta-synthesis method derived from Tranfield et al., (2003). In their study, the three aspects of critical research i.e., insight, critique, and transformative redefinition were applied to investigate and produce the literature in the field of Digital Entrepreneurship. Likewise, Zaheer et al., (2019), and Kraus et al., (2018) reviewed the literature on Digital Entrepreneurship and provided ideas for further research for scholars working in this field of Digital Entrepreneurship. Satalkina and Steiner (2020) conducted a systematic literature review to advance a demanding and thoughtful concept of Digital Entrepreneurship and its role in the transformation of the innovation system. Through the identification of key categories of Digital Entrepreneurship, using a comprehensive Systematic Literature Review based on a PRISMA framework. This study helped to detect the distinctiveness of Digital Entrepreneurship vis-a-vis traditional business mechanisms.

Steininger (2019) conducted research work in Information Systems (IS), Entrepreneurship, and General and Strategic Management (GSM) to produce an outline of the Information Technology-related entrepreneurship research background. Similarly, Anim-Yeboah et al., (2020) contributed to the thoughtful conceptualization of the Digital Entrepreneurship phenomenon using a systematic literature review approach and observed that existing literature typically lacked comprehensive theoretical foundations. More work implementing suitable and recognized theoretical methodologies is anticipated. Conversely, most of the studied papers also concentrated largely on concerns vis-a-vis the technology itself than those about the traditional enterprise.

Given the above-stated literature review lacking comprehensive theoretical foundations, this study aims to address the following research questions:

RQ1: What key themes, study contexts, and methodologies are employed in Digital Entrepreneurship research studies?

RQ2: How has the concept of Digital Entrepreneurship evolved over the years?

RQ3: What are the future research avenues related to Digital Entrepreneurship research studies for scholars working in diverse fields?

To uncover the answers to the above-stated research questions, the objectives of this review were set as (1) accelerate thematic progress on the concept of Digital Entrepreneurship by investigating all its interrelated key themes through extracting, selecting, and reviewing the literature on Digital Entrepreneurship; (2) compile key themes, contexts of studies, and methodologies that are related to the concept of Digital Entrepreneurship; and (3) propose a conceptual model followed by providing ideas for future research avenues for scholars and academicians working in diverse fields.

The paper is organized into seven sections to address our research questions which are as stated. Section 1 offers an overview of this research study along with its purpose and flow of this study. Section 2 presents the conceptual underpinnings and recent debate on Digital Entrepreneurship. Section 3 describes the research approach and the method used for searching relevant articles in databases. Section 4 discusses our findings of the study as identified from the results of reviewing the literature. Section 5 proposes a conceptual model. Section 6 presents the future research avenues and Section 7 outlines the concluding observations of the study.

## 2. Conceptual underpinnings and recent debate on digital entrepreneurship

This section defines the conceptual underpinnings and recent debate on Digital Entrepreneurship.

With the emergence of industrialization in the early 1840s, individuals and organizations started setting up new types of enterprises. This gave birth to the term ‘Entrepreneurship’, which was later used in business terminology during the 1980s (Stevenson, 1983). Entrepreneurship as a theory can be defined as the process by which new organizations come into existence. The founder of a new organization is known as an entrepreneur (Gartner, 1989). In other words, an entrepreneur is someone who develops a niche or a business strategy within a market to satisfy the market’s needs and wants (Garfield, 1986; Gartner, 1985). Many individuals aspire to be entrepreneurs because they are looking for freedom, independence, and wealth which can be achieved through entrepreneurship. Larger corporations want to become more ‘entrepreneurial’ because of the innovative and adaptive qualities they see in their smaller and often more successful competitors (Stevenson, 1983). Digitalization is not a new phenomenon for the global business world, it has been transforming traditional businesses into digital businesses using digital technologies through the Internet in previous decades. This led to the birth of the concept of Digital Entrepreneurship, which has been defined as a “sub-category of entrepreneurship in which some or all of what would be physical in a traditional organization has been digitalized”. This is inclined to be considered a new phenomenon, despite emerging in the early 1990s (Hull et al., 2007). Undoubtedly, digitalization is not the only response to most of the organizational challenges across the diverse sub-segments and Digital Entrepreneurship rolls over to other businesses enabling them to recover faster from the diverse organizational challenges to become more resilient (Khlystova et al., 2022).

We follow the Systematic Literature Review (SLR) approach seen in prior reviews (Hassan, Rahman & Paul, 2022; Mariani et al., 2022a; Mariani et al., 2022b; Mariani et al., 2021; Satalkina & Steiner, 2020; Mariani & Borghi, 2019; Kraus et al., 2018; Zaheer et al., 2019). Moreover, the SLR approach was employed in diverse existing studies in the field of Digital Entrepreneurship to produce insights into contemporary advancements in this phenomenon (Zaheer et al, 2019). A few researchers in their study, compiled literature on Digital Entrepreneurship to provide an up-to-date compilation of key topics and methods discussed in the relevant literature and based on the findings of the systematic literature review, researchers proposed a research map pointing to further research opportunities for scholars working in the field (Kraus et al., 2018). In another study, a structured literature review approach employed the identification of key categories of Digital Entrepreneurship and its differentiation from other types of business activities (Satalkina & Steiner, 2020). In most of the ongoing research, the main goal of entrepreneurship-related studies was to uncover the nature of the entrepreneurial landscape and what poses hindrances to it (Nambisan, 2017; McKelvie et al., 2011).

Regardless of existing studies, modern research investigations resist highlighting the significance of Digital Entrepreneurship. In addition to this, the chronological terms and concepts of this arena have repeatedly gone unnoticed. However, the existing research on entrepreneurship has mostly ignored the part played by digital technologies in entrepreneurial quests. Previous research on technology and entrepreneurship

**Table 1**
Comparison of the key features of the extant literature reviews.

| Study | Focus | Findings |
|---|---|---|
| Anim-Yeboah et al., 2020 | Conceptualization of Digital Entrepreneurship | • Six electronic databases were selected for extracting related articles. Period of publication selected were 2013 to 2018. 101 articles were found related to the research theme. The findings suggest that extant literature mostly lacked sound theoretical underpinnings. |
| Kraus et al., 2018 | Assessment of relevant academic articles on Digital Entrepreneurship | • 35 articles were found related to the research theme.Six streams namely digital business models; Digital Entrepreneurship process; platform strategies; digital ecosystem; entrepreneurship education; and social Digital Entrepreneurship of research that deals with Digital Entrepreneurship were recognized.It was founded that research on Digital Entrepreneurship still appears to be in its embryonic stage. |
| Mariani et al., 2022b | An integrated view of the body of knowledge of artificial intelligence | • Articles were extracted from the Scopus database. 4488 articles were found related to the research theme. Eight clusters were identified: Memory and computational logic, Neural networks, Machine learning, and linguistic analytics, Decision making and cognitive processes, Technology acceptance and adoption, big data and robots, social media and text mining, and social media content analysis. The study has presented a holistic manner of research on AI in disciplinary areas in an exemplary way. |
| Satalkina & Steiner, 2020 | Concept of Digital Entrepreneurship and its role in the transformation of the innovation system | • Three core dimensions of the innovation system namely Entrepreneur, Entrepreneurial process, and its relevant ecosystem within Digital Entrepreneurship determinants were identified. Existing literature's systematization is extremely significant for future research directions. |
| Steininger, 2019 | Information Systems, Entrepreneurship, and General and Strategic Management | • Articles were extracted from the websites of each journal. Years of publication selected were 1990 to 2017. 292 articles were found related to the research theme. *Facilitator*; *Mediator*, *Outcome*; and U*biquity* were the identified four major roles played by Information Technology in entrepreneurial operations. |
| Zaheer et al., 2019 | Recent developments in the field of Digital Entrepreneurship | • Application of the three aspects of critical research namely Insight, Critique, and Transformative redefinition were employed to present the findings of the study. 133 articles were found related to the research theme. The study disclosed that there is a lack of in-depth study despite the theoretical perspectives and methodologies related to existing studies. |

concentrated on entrepreneurship as experienced in digital technology and intensive settings, wherein technology was treated simply as a perspective for experimental research studies (Zupic, 2014; Beckman et al., 2012). Limited efforts have been made to conjecture the role of specific aspects of Digital Entrepreneurship. Hence, it is now essential to explore the concept of Digital Entrepreneurship from a thematic perspective to build a notional consideration of it and to formulate suggestions for how to close the Digital Entrepreneurship gap (Kollmann et al., 2022; Engel, 2015). A better understanding of business and its internationalization through a digital presence is required to learn about the phenomenon of Digital Entrepreneurship in more detail (Nambisan, 2017). Digitalization has helped a lot in conceptualizing entrepreneurship worldwide (Prashantham et al., 2019; Ojala et al., 2018). Digital developments and international entrepreneurship are increasingly relying upon digital platforms (Chen et al., 2019; Brouthers et al., 2016). Legislators, scholars, and researchers have paid attention to the concept of the Digital Ecosystem and the term has been extensively used in academic research (Khlystova et al., 2022). Hence, compelled by the challenges posed by the development of the Digital Entrepreneurship concept, this study seeks to provide a systematic review of the literature on this topic. The comparison of the key features of the extant literature reviews tabulated in Table 1 states the key findings and focus of extant studies.

After comparing the key features of the extant literature reviews tabulated in Table 1 to clarify what other reviews found and how our study is different, it was observed that most of the studies (Mariani et al., 2022b; Satalkina & Steiner, 2020; Zaheer et al., 2019; Kraus et al., 2018) stated in this table had not employed multiple electronic databases for extracting relevant articles. However, in this study, five electronic databases namely Web of Science, SAGE Journals, ScienceDirect, EBSCOhost, and Scopus databases will be used. According to Levy and Ellis (2006), it is better to use multiple databases in conducting literature searches using a systematic literature review approach for research related to multi-disciplinary subjects (Levy & Ellis, 2006). Our selection of five electronic databases is suitable for Digital Entrepreneurship study, which is a multidisciplinary subject. Additionally, it was also found that many of the studies (Mariani et al., 2022a; Satalkina & Steiner, 2020; Anim-Yeboah et al., 2020; Zaheer et al., 2019; Kraus et al., 2018) stated in this table had employed the SLR approach like this research study, but the years of publication selected in their studies were either limited or till 2018. This study will act as an extension to previous studies in many ways as relevant articles in this study will be extracted till 2021 as years of publication. This will further provide better insights into the phenomenon of Digital Entrepreneurship. This study is also different from previous studies as the key findings of the study will be presented using the TCM framework (i.e., *T*-Themes, C-Contexts, and M-Methodologies). This framework was adapted from the prior reviews (Paul et al., 2017; Paul & Rosado-Serrano, 2019; Mishra et al., 2021) and had not been used by previous studies. This study will identify and describe the main themes, contexts, and methodologies employed in Digital Entrepreneurship research studies. It will also present the results of the review of the literature in form of the key findings and set directions for future research using the TCM framework. None of these

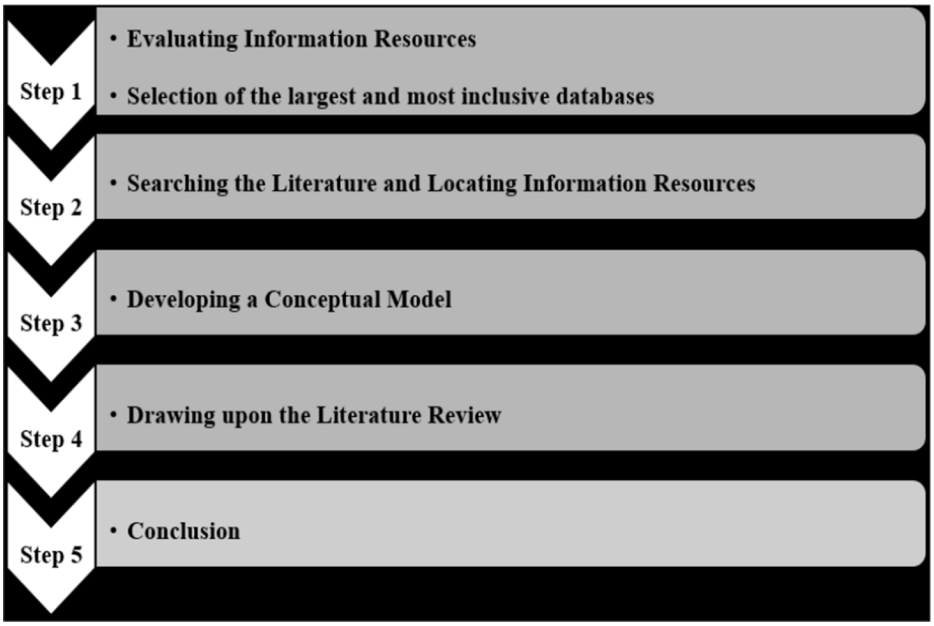



**Fig. 1.** Steps employed in the SLR approach of Rowley and Slack (2004).

studies proposed future research avenues along with Future Research Questions (FRQ). However, this study will propose future research avenues along with FRQs to further differentiate this study from previous studies. None of these stated studies had extracted relevant articles exclusively from the Social Sciences Citation Index (SSCI) indexed journals as inclusion criteria for selection. The goal of this study is to present a review that can serve as a base and one-stop source for offering insights into what has been done in Digital Entrepreneurship, what is currently being done, and what are the future research avenues in Digital Entrepreneurship studies. The next section describes the employed research approach of the study.

## 3. Research approach

A Systematic Literature Review (SLR) approach was employed to fulfill the research objectives of this study following Rowley & Stack and Paul et al. (2021a) (See Fig. 1). The SLR approach is a systematic approach for scanning information or knowledge resources and devising a plan of focus to perform an analysis of literature, including its explanatory aspects, and the details (Paul & Criado, 2020; Paul & Barari, 2022) (See Fig. 1).

The SLR is considered an indispensable approach to synthesize the findings of a given body of research articles (Ginsberg & Venkatraman, 1985; Paul, 2019; Paul & Mas, 2020). In comparison with the research approach concerning the SLRs of Mariani et al., (2021), it was observed that the Bibliometric mapping and the SLR were employed in the field of Corporate Social Responsibility (CSR) in family businesses drawing on the Web of Science (WOS) and the Scopus databases. They systematized their studies into an interpretative framework through the SLR approach by identifying the drivers and outcomes of CSR practices, processes, and strategies in family businesses Mariani et al., (2021). In addition, Mariani et al., (2022a) employed the SLR approach and extracted relevant articles from the Scopus database and presented a cohesive outlook of the body of knowledge vis-a-vis Artificial Intelligence (AI) research (Mariani et al., 2022b).

Furthermore, Mariani et.al (2022b) in one more alike study, followed the SLR methodology proposed by Tranfield et al., (2003) and Williams Jr. et al., (2020). They extracted data from the Web of Science and the Scopus databases. Here, two databases were used were selected as they accumulate an assortment of the most imperative sources of academic research and scholarly articles in the social sciences field (Vieira & Gomes, 2009). The SLR approach is considered an appropriate tool to systematically assess and evaluate a given body of literature (Tranfield et al., 2003). Thus, helping generate robust research agendas to advance the field (Williams Jr. et al., 2021). Consequently, the SLR approach has been largely adopted in the social sciences (Tranfield et al., 2003) and more specifically in management and entrepreneurship studies to present findings in a relevant and accessible manner to scholars and decision-makers (Williams Jr. et al., 2021; Cubric, 2020; Parris & Peachey, 2013; Crossan & Apaydin, 2010; Pittaway et al., 2004; Tranfield et al., 2003). In addition to Tranfield et al. (2003), Zupic and Čater (2015) provide ideas for a Bibliometric method for mapping research specialties and can reliably connect publications, authors, or journals, identify research sub-streams, and produce maps of published research. Furthermore, as a comprehensive, well-thought-out, and methodical way of precisely consolidating examinations, the SLR is an effective approach to identifying research gaps in the literature (Klassen et al., 1998). In comparison with other conventional literature review approaches, the SLR accommodates a greater diversity of research methods in its approach (Kitchenham & Charters, 2007). This study is not related to the Bibliometric approach and hence, we decided to work with the TCM framework (Paul & Rosado-Serrano, 2019) along with the SLR approach adopted from Rowley and Slack's (2004) study. This study has employed the five steps from Rowley and Slack (2004) study namely, 1. Data collection, 2. Evaluation of the data, searching for and locating information sources, 3. Developing a conceptual model, 4. Collating the research, and 5. Summarizing it (Rowley & Slack, 2004). This approach was indispensable for pinpointing the most prominent Digital Entrepreneurship research studies and defining the key themes, contexts, and methodologies, providing insights for future research avenues in this field of research.

We deployed the SLR approach over other literature review approaches for several reasons: first, the SLR allows to yield holistic conclusions curtailing from a comprehensive, translucent and deliberate approach that supports reproducibility (Williams et al., 2021; Cubric, 2020; Snyder, 2019). Second, in comparison to the narrative literature reviews, the SLR is more objective in nature (Tranfield et al., 2003). Third, by implementing a quantitative approach, the SLR supports finding the current status of research and research gaps in ongoing studies (Snyder, 2019; Tranfield et al., 2003). Hence, we found the SLR

**Table 2**
Search strategies employed for extracting articles from electronic databases using a systematic literature review approach.

| | |
|---|---|
| **Name of database: Web of Science**<br>**Search keywords employed:** ("Digital Entrepreneurship") AND ("Digital technolog*" OR "Digital entrepreneurship Ecosystem*" OR "Digital platform*")<br>**Inclusion criteria:** Document type: Articles; Language: English<br>**Exclusion criteria:** Articles not listed in SSCI-indexed journals and outside the research scope were excluded. The articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. | **Name of database: SAGE Journals**<br>**Search keywords employed**: ("Digital Entrepreneurship") AND ("Digital technolog*" OR "Digital entrepreneurship Ecosystem*" OR "Digital platform*")<br>**Inclusion criteria:** Refine Search: Sort by most cited<br>**Exclusion criteria:** Articles not listed in SSCI-indexed journals and outside the research scope were excluded. The articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. |
| **Name of database: EBSCOhost**<br>**Search keywords employed:** ("Digital Entrepreneurship") AND ("Digital technolog*" OR "Digital entrepreneurship Ecosystem*" OR "Digital platform*")<br>**Inclusion criteria:** Limit to: Full text and scholarly (peer-reviewed) journals; Source types: Academic journals Language: English<br>**Exclusion criteria:** Articles not listed in SSCI-indexed journals and outside the research scope were excluded. The articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. | **Name of database: ScienceDirect**<br>**Search keywords employed:** ("Digital Entrepreneurship") AND ("Digital technolog" OR "Digital entrepreneurship Ecosystem" OR "Digital platform")<br>**Note:** As Wildcard symbols such as * are not accepted over ScienceDirect during the search process, they were removed from the search keywords.<br>**Inclusion criteria:** Refine by: Article type: Research articles; Subject areas: Business, Management, & Accounting<br>**Exclusion criteria:** Articles not listed in SSCI-indexed journals and outside the research scope were excluded. The articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. |
| **Name of database: Scopus**<br>**Search keywords employed:** ("Digital Entrepreneurship") AND ("Digital technolog*" OR "Digital entrepreneurship Ecosystem*" OR "Digital platform*")<br>**Inclusion criteria:** Document type: Articles Language: English; Publication stage: Final; Subject area: Business, Management, & Accounting<br>**Exclusion criteria:** Articles not listed in SSCI-indexed journals and outside the research scope were excluded. The articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. | |
| The total number of articles displayed after using the search keywords | 399 |
| The total number of articles identified after using inclusion and exclusion criteria | 109 |
| The total number of articles extracted after reading | 65 |
| The total number of duplicate articles not listed in the SSCI–indexed journals were removed after reading | 25 |
| The total number of articles listed in the SSCI-indexed journals selected for the final review | 40 |

approach fit for addressing the stated research questions of this study. The research approach employed for this study has followed a few guiding articles on how to craft impactful review papers and to develop the knowledge base in the field of Digital Entrepreneurship, this study has taken guidance for designing the research approach of this study (Mariani et al., 2022a; Mariani et al., 2022b; Mariani et al., 2021; Paul et al., 2021a; Paul & Criado, 2020; Rowley & Slack, 2004; Tranfield et al., 2003).

### 3.1. Study parameters

Qualitative and Quantitative research approach has been used as output-measuring techniques to enumerate and evaluate the research conducted in Digital Entrepreneurship studies. To ensure that the research study would be more inclusive, it was necessary to account for the use of various terminologies by different authors in the examination of similar concepts, which was premeditated to create the research study more inclusive (Rey-Martí et al., 2016; Merigó et al., 2015; Yang et al., 2010). The study parameters that were employed in this study are presented in Table 2.

### 3.2. Data extraction

This review is based on the following classification: the names of journals, article titles, authors, year of publication, and key findings. To extract relevant articles, a search was conducted in five electronic databases (see Fig. 2).

### 3.3. Review protocol

To review the research work, a protocol to document the analysis method was developed and research publication was considered as the inclusion criteria. In this review, five electronic databases were employed namely: Web of Science, SAGE Journals, ScienceDirect, EBSCOhost, and Scopus databases were employed to find relevant articles. We ran a search query in the stated five electronic databases using a combination of the search keywords ("Digital Entrepreneurship") AND ("Digital technolog*" OR "Digital entrepreneurship Ecosystem*" OR "Digital platform*") (adopting the Boolean operators "AND" and "OR") in the fields related to "title," "abstract," and "keywords." We considered works published until December 31, 2021. The exclusion criteria applied included the delimiting of the papers to peer-reviewed research articles. Confining the search to the subject areas "Business, Management, and Accounting", the articles were also restricted to those concerning Digital Entrepreneurship, and thus, all articles concerning policy, education, and social entrepreneurship were eliminated. After the papers had been identified and extracted, they were arranged and cross-checked to remove duplications of articles.

### 3.4. Data screening

After screening all five selected databases to identify and select relevant articles in the field of Digital Entrepreneurship Research, 399 articles were displayed using the search keywords. After using inclusion and exclusion criteria, 109 articles were identified, of which 65 were extracted. After reading the abstracts, 25 articles were removed due to the duplication of articles, unknown journals, and lack of relevance to the research theme. Finally, 40 articles from 25 journals listed in the Social Sciences Citation Index (SSCI) indexed journals were selected as the final sample for the review of the literature (see Table 2, Table 3, and Table 4).

This review is based on 40 articles and here the sample size is relatively small and is indicating the minimum threshold value. However, the rule of thumb related to the minimum threshold value states, "A domain with 40 articles or more indicates that the domain has reached sufficient maturity for review." Consequently, this rule enables our employed Systematic Literature Review approach for this study to make a substantial contribution to the domain of research with the minimum threshold value of 40 articles as the final sample size (Paul & Criado, 2020).

All the selected articles were tabulated in MS Excel to identify the key themes, contexts, and methodologies employed in the research studies to form the basis of the selected literature. All the selected articles were evaluated using MS Excel and four themes were identified as key findings of this study. These findings were further explained in the next section.

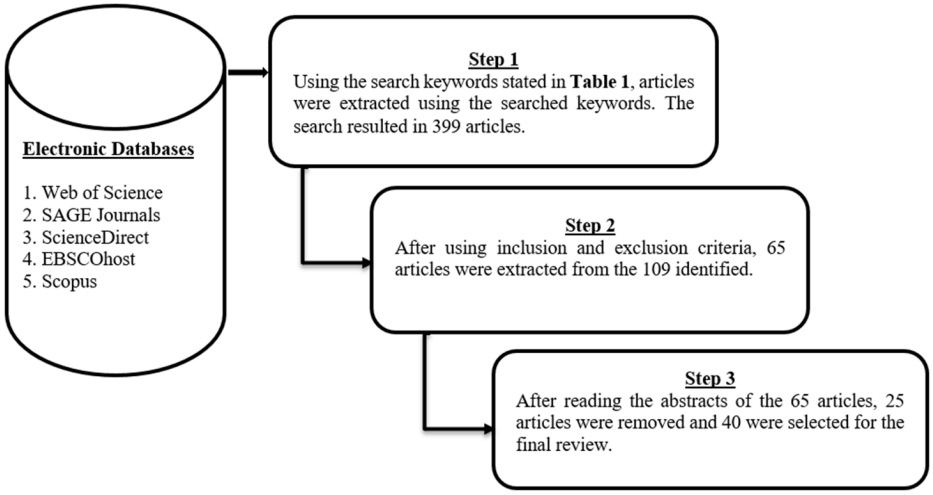



**Fig. 2.** Search and selection procedure for research articles.

## 4. Key findings: themes, contexts, and methodologies identified in digital entrepreneurship studies

The TCM framework (i.e., *T*-Themes, C-Contexts, and M-Methodologies) was adapted from the prior reviews (Paul et al., 2017; Paul & Rosado-Serrano, 2019; Mishra et al., 2021) and has been used to classify the key findings of this study. Moreover, the TCM framework is indispensable for pinpointing the most prominent Digital Entrepreneurship research studies and defining the key themes, contexts, and methodologies, providing insights for future research avenues in this field of research (Billore & Anisimova, 2021; Paul et al., 2021b; Khlyslova et al., 2022; Hassan, Rahman, Paul; 2022). The key findings of this study were classified in the below sub-sections using this framework.

### *4.1. Major themes in digital entrepreneurship studies*

Digitalization has become a buzzword for the modern business world and brought technological disruptions to the existing business models of organizations. Businesses are now using Information and Communications Technology (ICT) tools, such as artificial intelligence, Chat-bots, mobile applications (apps), social media platforms, Cloud-based services, enterprise resource planning systems, big data and business analytics, Web-based services, and various other Internet-enabled technologies to automate diverse business activities that need substantial human participation. In this section of the study, four major themes have been identified that are found to be widely examined in Digital Entrepreneurship research and allied research contexts.

#### *4.1.1. Digital technologies*

Digital technologies have broadened the latitude of entrepreneurial actions by transforming the landscape of entrepreneurial processes and elevating important interrogations at the juncture of entrepreneurship and digital technologies, resulting in Digital Entrepreneurship (Nambisan, 2017). Entrepreneurs started using ICT in digital technology markets, as well as its social capital, to overcome challenges and nurture their businesses. The digital transformation of businesses depended on a few parameters, such as business size, age, industry type, and market competition (Kromidha & Robson, 2021). ICT overpoweringly shaped all types of business activities, such as commercial transactions, business communication, and interactions with clients, suppliers, and target customers. Through the adaptation of diverse digital technologies, there was an increase in Digital Entrepreneurship among firms globally. It further led to an opening up of business prospects for small firms by delivering a competitive edge over large firms (Reuschke et al., 2021). Digital technologies assisted business firms in creating new possibilities. Hence, it became important to formulate a digital tool or a procedure through which entrepreneurs could handle business uncertainties by leveraging the potential of digital technologies (Vassilakopoulou & Grisot, 2020).

Businesses also acquired cost advantages through the acceptance of digital technologies, and this further resulted in digital interactions instead of traditional interactions (Braune & Dana, 2021). This led to an increase in online businesses globally through the engagement of traditional businesses in the online buying and selling of goods and services. Customers were also able to access online sales support. However, the inclusive digital transformational effects of digital technologies on the landscape and procedures of entrepreneurship were trivial, as small firms traded in an offline mode due to limited capital and technical know-how. There was limited use of digital technologies by businesses for their online business models, especially in the home-based business sector in rural areas. Furthermore, digital technologies also had a significant influence on how new business ventures were conceptualized and established (Reuschke & Mason, 2020; Mariani, 2019). Conversely, the need to identify the key role and significance of Digital Technologies for academic entrepreneurship was observed (Secundo et al., 2020). Although the topic of Digital Entrepreneurship had become more widely known and its potential recognized, there was insufficient literature available on digital technologies and their impact on the entrepreneurial process (Elia et al., 2020). Digital technologies played a key role as resources for entrepreneurial activities and there was significant concentration on the phenomenon of Digital Entrepreneurship. Although considerable research was concentrated on the role of digital technologies in entrepreneurship, and how they were transforming the field, there was relatively little research on the role of digital technologies in Digital Entrepreneurship. Entrepreneurs in developing countries utilized entrepreneurship as a tool to generate employment and income and, in so doing, supported their home countries in tackling poverty, especially in rural populations. Business partners, families, and communities also supported entrepreneurs in overcoming diverse challenges by bridging the business and market gaps. Through the adoption of digital technologies, such as mobile apps, entrepreneurs could strengthen their ties with communities and families, as the use of digital technologies had a positive impact on these relationships. However, business partners' support had no association with entrepreneurial processes (Soluk et al., 2021).

Businesses that were unsuccessful in digital transformation became less stable in comparison with those that were successful. Hence, it became vital for businesses to address Digital Entrepreneurship tactically. This had further compelled businesses to employ an array of ICT tools across multiple use cases, with an ability to be flexible in both the

**Table 3**
List of the journals included in the systematic literature review.

| S. No. | List of the Journals as final selection | Total no. of articles identified | Total no. of articles extracted | Total no. of articles selected |
|---|---|---|---|---|
| 1 | Canadian Journal of Administrative Sciences | 2 | 2 | 2 |
| 2 | International Entrepreneurship and Management Journal | 3 | 3 | 2 |
| 3 | Small Business Economics | 12 | 10 | 5 |
| 4 | Journal of Business Research | 15 | 11 | 3 |
| 5 | Technological Forecasting and Social Change | 22 | 12 | 5 |
| 6 | Technology Analysis & Strategic Management | 3 | 1 | 1 |
| 7 | International Journal of Entrepreneurial Behavior & Research | 3 | 1 | 1 |
| 8 | Journal of Strategic Information Systems | 8 | 4 | 2 |
| 9 | International Business Review | 2 | 1 | 1 |
| 10 | European Journal of Information Systems | 2 | 0 | 0 |
| 11 | Entrepreneurship Theory and Practice | 2 | 1 | 1 |
| 12 | Organization | 1 | 1 | 1 |
| 13 | Creativity and Innovation Management | 4 | 1 | 1 |
| 14 | Business Horizons | 2 | 1 | 0 |
| 15 | International Journal of Contemporary Hospitality Management | 1 | 0 | 0 |
| 16 | Journal of Business Venturing | 2 | 1 | 1 |
| 17 | International Journal of Emerging Markets | 1 | 0 | 0 |
| 18 | Electronic Commerce Research and Applications | 2 | 1 | 0 |
| 19 | Management Decision | 1 | 0 | 0 |
| 20 | International Marketing Review | 2 | 1 | 1 |
| 21 | Information & Management | 2 | 1 | 1 |
| 22 | Journal of Business & Industrial Marketing | 1 | 0 | 0 |
| 23 | Journal of Small Business Management | 1 | 0 | 0 |
| 24 | Futures | 4 | 3 | 3 |
| 25 | International Journal of Information Management | 1 | 1 | 1 |
| 26 | Technology in Society | 2 | 1 | 1 |
| 27 | Cities | 1 | 1 | 1 |
| 28 | Entrepreneurship & Regional Development | 1 | 1 | 1 |
| 29 | Journal of Management Studies | 1 | 1 | 1 |
| 30 | Information Systems Journal | 2 | 1 | 1 |
| 31 | Tourism Review | 1 | 1 | 1 |
| 32 | International Journal of Cultural Studies | 1 | 1 | 1 |
| 33 | International Small Business Journal | 1 | 1 | 1 |
| | Total | 109 | 65 | 40 |

**Table 4**
Authors of the selected articles.

| S. No. | List of Author (s) |
|---|---|
| 1 | Ahsan & Musteen, 2021 |
| 2 | Arvidsson & Monsted, 2018 |
| 3 | Braune & Dana, 2021 |
| 4 | Dong, 2019 |
| 5 | Du et al., 2018 |
| 6 | Dy, 2019 |
| 7 | Elia et al., 2020 |
| 8 | Fossen & Sorgner, 2021 |
| 9 | Griva et al., 2021 |
| 10 | Gupta & Bose, 2019 |
| 11 | Huang et al., 2020 |
| 12 | Khan et al., 2021 |
| 13 | Kraus et al., 2018 |
| 14 | Kromidha & Robson, 2021 |
| 15 | Kuester et al., 2018 |
| 16 | Ladeira et al., 2019 |
| 17 | Leong et al., 2020 |
| 18 | Leung & Cossu, 2019 |
| 19 | Luo & Chan, 2021 |
| 20 | Mariani, 2019 |
| 21 | Martinez Dy et al., 2018 |
| 22 | McAdam et al., 2020 |
| 23 | Murthy & Madhok, 2021 |
| 24 | Nambisan, 2017 |
| 25 | Nambisan & Baron, 2021 |
| 26 | Park et al., 2021 |
| 27 | Reuschke et al., 2021 |
| 28 | Reuschke & Mason, 2020 |
| 29 | Sahut et al., 2021 |
| 30 | Schiavone et al., 2020 |
| 31 | Schückes & Gutmann, 2021 |
| 32 | Secundo et al., 2020 |
| 33 | Shaheer & Li, 2020 |
| 34 | Soluk et al., 2021 |
| 35 | Song, 2019 |
| 36 | Sussan & Acs, 2017 |
| 37 | Taylor-Wesselink & Teulon, 2022 |
| 38 | Vadana et al., 2019 |
| 39 | Vassilakopoulou & Grisot, 2020 |
| 40 | Wilk et al., 2021 |

adoption and usage of digital technology (Arvidsson & Monsted, 2018). New digital business firms were frequently established on the foundation of innovative business models that distinguished them from industry rivalries and determined whether the business model was suitable or not. Entrepreneurs in their digital entrepreneurial endeavors focus on implementing multiple business models by utilizing innovative digital technologies before settling upon a particularly viable business model with the support of innovative digital platforms (Gupta & Bose, 2019).

#### 4.1.2. Digital platforms

A "Digital Platform is a shared, common set of services and Information Technology architecture that aids to host complementary offerings, including digital artifacts" (Nambisan & Baron, 2021). Examples of digital platforms are Apple's iOS (a mobile app system that runs on Apple smartphones), Google's Android (that enables mobile apps to run on their particular company's smartphones), Amazon Web Services (that offers digital tools and digital platforms to start-ups), Microsoft Azure (digital tools and digital platforms for small-sized enterprises), Google Clouds (digital tools and digital platforms for small-sized enterprises as well as start-ups), and Ford's SYNC 3 (that hosts integrated communication, navigation, and entertainment apps in cars). Entrepreneurs across the world had developed business opportunities using diverse digital tools and digital platforms and offered their products and services to target markets more effectively by delivering better quality products and services (Park et al., 2021; Nambisan & Baron, 2021). Digital platforms and their associated digital ecosystems also delivered countless benefits by providing a new and economically favorable entrepreneurship environment for entrepreneurs (Nambisan & Baron, 2021). Additionally, digital technologies had started to disrupt traditional business models, and existing businesses that were unable to adapt were outflanked. Studies also revealed that traditional businesses were at risk due to the increase in digital platforms and the potential to alter old

**Table 5**
Major themes in digital entrepreneurship studies.

| Themes | No. of articles identified | % | Exemplary studies |
|---|---|---|---|
| Digital technologies | 12 | 30.00 | Reuschke et al.,2021; Kromidha & Robson, 2021; Braune & Dana, 2021; Soluk et al., 2021; Vassilakopoulou & Grisot, 2020; Reuschke & Mason, 2020; Elia et al., 2020; Secundo et al., 2020; Gupta & Bose, 2019; Mariani, 2019; Arvidsson & Monsted, 2018; Nambisan, 2017 |
| Digital platforms | 07 | 17.50 | Nambisan & Baron, 2021; Khan et al., 2021; Taylor-Wesselink & Teulon, 2022; Ahsan & Musteen, 2021; Park et al., 2021; Murthy & Madhok, 2021; Shaheer & Li, 2020 |
| Digital transformation of businesses | 17 | 42.50 | Wilk et al., 2021; Griva et al., 2021; Schückes & Gutmann, 2021; Luo & Chan, 2021; Sahut et al., 2021; McAdam et al., 2020; Leong et al., 2020; Schiavone et al., 2020; Leung & Cossu, 2019; Vadana et al., 2019; Ladeira et al., 2019; Dong, 2019; Dy, 2019; Kraus et al., 2018; Du et al., 2018; Martinez Dy et al., 2018; Kuester et al., 2018 |
| Digital ecosystems | 04 | 10.00 | Huang et al.,2020; Fossen & Sorgner, 2021; Song, 2019; Sussan & Acs, 2017 |

Note: The reported frequencies were based on the most appropriate studies from 40 selected articles.

**Table 6**
Contexts investigated in digital entrepreneurship studies.

| Context (country or region) | No. of studies identified | % | Exemplary studies |
|---|---|---|---|
| Canada | 01 | 02.50 | Braune & Dana, 2021 |
| China | 05 | 12.50 | Luo & Chan, 2021; Park et al., 2021; Huang et al., 2020; Kraus et al., 2018; Du et al., 2018 |
| European Union | 01 | 02.50 | Khan et al., 2021 |
| Finland | 01 | 02.50 | Vadana et al., 2019 |
| France | 02 | 05.00 | Sahut et al., 2021; Schiavone et al., 2020 |
| Germany | 02 | 05.00 | Schückes & Gutmann, 2021; Kuester et al., 2018 |
| Greece | 01 | 02.50 | Griva et al., 2021 |
| India | 02 | 05.00 | Soluk et al., 2021; Gupta & Bose, 2019 |
| Indonesia | 01 | 02.50 | Leong et al., 2020 |
| Italy | 03 | 07.50 | Fossen & Sorgner, 2021; Elia et al., 2020; Secundo et al., 2020 |
| Netherland | 01 | 02.50 | Dong, 2019 |
| Norway | 02 | 05.00 | Vassilakopoulou & Grisot, 2020; Arvidsson & Mønsted, 2018 |
| Portugal | 01 | 02.50 | Ladeira et al., 2019 |
| Saudi Arabia | 01 | 02.50 | McAdam et al., 2020 |
| Scotland | 03 | 07.50 | Reuschke et al., 2021; Reuschke & Mason, 2020, Dy, 2019 |
| Taiwan and Thailand | 01 | 02.50 | Leung & Cossu, 2019 |
| Trinidad and Tobago | 01 | 02.50 | Taylor-Wesselink & Teulon, 2022 |
| UK | 03 | 07.50 | Kromidha & Robson, 2021; Mariani, 2019; Martinez Dy et al., 2018 |
| USA | 05 | 12.50 | Nambisan & Baron, 2021; Ahsan & Musteen, 2021; Song, 2019; Sussan & Acs, 2017; Nambisan, 2017 |
| Not specified | 03 | 07.50 | Wilk et al., 2021; Murthy & Madhok, 2021; Shaheer & Li, 2020 |

Note: The reported frequencies were based on the most appropriate studies from 40 selected articles.

business models. On the other hand, digital tools and digital platforms were nurturing entrepreneurship by supporting entrepreneurs (Khan et al., 2021; Shaheer & Li, 2020).

Entrepreneurs networked with other digital platform users to seek new business opportunities for developing and managing their businesses at different stages (Taylor-Wesselink & Teulon, 2022). In this way, digital platforms assisted businesses in achieving cost advantages through the timely matching of market demands, shaping digital social interactions, and adding value by contributing to the growth of existing businesses through economic development. The innovative features of digital platforms made them the foundation of the Digital Entrepreneurship ecosystem and the knowledge generated by these aided entrepreneurs in diverse business activities in the long run. Digital platforms and their associated ecosystems also created Digital Entrepreneurship (Nambisan & Baron, 2021). Despite the popularity and global dissemination of digital platforms, there was a limited amount of literature available uncovering their underlying potential and role in the creation of Digital Entrepreneurship (Ahsan & Musteen, 2021; Murthy & Madhok, 2021).

#### *4.1.3. Digital transformation of businesses*

With the global advancement in the acceptance and adoption of digital technologies and digital platforms, these technological disruptions had a great impact on traditional businesses, entrepreneurship, and the existing business models in developing countries, such as India, Russia, China, Mexico, Indonesia, Malaysia, Turkey, Thailand, and South Africa. The impact of Digital Entrepreneurship on business situations in developing economies had altered traditional businesses, which started transforming into digital businesses with the knowledge of entrepreneurs who played a key role. Digital businesses implemented innovative digital technologies to advance their business set-ups and formulate new and original digital business models, and hone business intelligence by employing it with existing and potential customers and stakeholders using digital tools and digital platforms. This led to the digitalization of traditional businesses, products, and services, as well as associated entrepreneurial activities by creating digital ecosystems by transforming traditional businesses into digital businesses and the Internet played a key role in this makeover (Sahut et al., 2021; Leung & Cossu, 2019). Little research was done on the emergence of businesses that were increasingly becoming involved in Digital Entrepreneurship with the digitalization of the primary and support activities of the business value chain and how digital transformation had empowered traditional businesses (Schückes & Gutmann, 2021; Vadana et al., 2019; Dy et al., 2018).

In a progressively digital world, almost every transaction could now be done through a smartphone, tablet, laptop, or personal computer and even the application of digital technologies and digital platforms had brought several benefits to businesses, society, and communities at large. However, the factors contributing to the success of the digital transformation of businesses and its inter-relations were still blurred (Schückes & Gutmann, 2021; Ladeira et al., 2019). The digital had posed enormous societal consequences beyond its business implications (Leong et al., 2020). There were also positive digital sentiments connecting digital technology, digital platforms, digital ecosystems, and industry with entrepreneurs in the promotion of their existing businesses, and, more broadly, the role of digital technologies and digital platforms in global business transformation became very imperative. However, negative digital sentiments indicated that the support of young people would be needed for digital transformation in the form of digital entrepreneurs focusing on youth regarding business strategy, digital leadership, and digital business management.

Although there were issues that businesses sought to overcome,

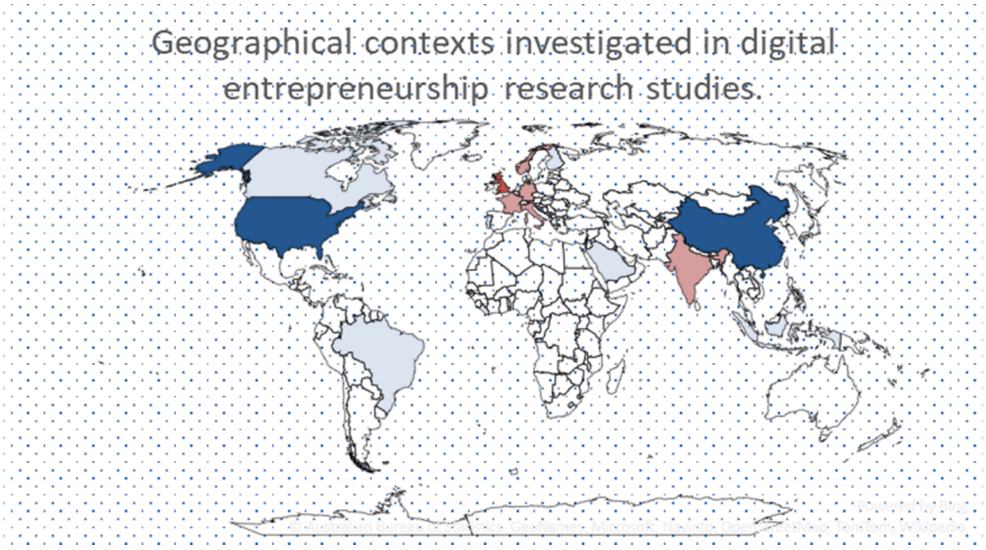



**Fig. 3.** Geographical contexts investigated in Digital Entrepreneurship research studies.

**Table 7**
Methodologies Investigated in Digital Entrepreneurship studies.

| Methodologies | No. of studies identified | % | Exemplary studies |
|---|---|---|---|
| Quantitative approach | 19 | 47.50 | Nambisan & Baron, 2021; Khan et al., 2021; Taylor-Wesselink & Teulon, 2022; Soluk et al., 2021; Fossen & Sorgner, 2021; Luo & Chan, 2021; Kromidha & Robson, 2021; Schückes & Gutmann, 2021; McAdam et al., 2020; Vassilakopoulou & Grisot, 2020; Leong et al., 2020; Reuschke & Mason, 2020; Gupta & Bose, 2019; Leung & Cossu, 2019; Vadana et al., 2019; Ladeira et al., 2019; Dong, 2019; Arvidsson & Monsted, 2018; Martinez Dy et al., 2018 |
| Qualitative approach | 17 | 42.50 | Braune & Dana, 2021; Ahsan & Musteen, 2021; Reuschke et al., 2021; Sahut et al., 2021; Shaheer & Li, 2020; Elia et al., 2020; Huang et al., 2020; Schiavone et al., 2020; Secundo et al., 2020; Song, 2019; Dy, 2019; Mariani, 2019; Ahsan & Kuester et al., 2018; Kraus et al., 2018; Du et al., 2018; Sussan & Acs, 2017; Nambisan, 2017 |
| Mixed approach | 04 | 10.00 | Wilk et al., 2021; Griva et al., 2021; Park et al.,2021; Murthy & Madhok, 2021 |

Note: The reported frequencies were based on studies included in the review.

similar changes stirred among digital entrepreneurs and social media users who were keen to understand, share, and learn from success and failure stories, as this was one of the most significant and impressive practices of entrepreneurship (Wilk et al., 2021). However, most digital start-ups fail before they can realize their potential to accomplish business growth. Moreover, what was required to accomplish business growth was highly dissimilar for digital start-ups compared with more traditional established businesses (Griva et al., 2021; Martinez Dy et al., 2018). The digital transformation had an evolving phenomenon in this digital age. When the literature started to investigate this phenomenon, attention was mainly paid to digital start-ups in developing markets. However, it was undecided exactly how a new start-up might digitally alter a business through entrepreneurial actions and digital innovations to meet business challenges and deal with the regulations that exist in highly regulatory business settings (Dong, 2019).

Digital innovation was the latest trend in the field of Digital Entrepreneurship and start-ups were adopting it to gain competitive advantages over their rivals. This caused both male and female entrepreneurs to focus more on their digital entrepreneurial journey. In addition, the rise of digital infrastructure had led to women's empowerment. Women's entrepreneurial activities and spaces are mutually sustaining. However, feminist geography research on entrepreneurship was underexplored, especially at the place of work, and the socialization of gender distinctiveness led to a gendered digital entrepreneurial process. Digital innovation was often underlined as a tool for socially sustainable economic development and the gendering of digital transformation sought further detailed probing (Luo & Chan, 2021; Du et al.,2018; Kuester et al., 2018). Moreover, digitalization was labeled as a great leveler in terms of the entrepreneurial journey of women. However, little was known about the business possibilities offered by digital innovation and transformation for women who were controlled by sociocultural practices. Women in Saudi Arabia, for example, used digital resources to renovate their epitomized identities and survived actualities rather than to outflow gender personification as offered by the digital environment (McAdam et al., 2020). All these occurrences in the digital business environment ignited the interest of academics and practitioners to explore this phenomenon further to uncover how entrepreneurs established digital start-ups to commercialize their innovations through digitalization (Schiavone et al., 2020; Kraus et al., 2018; Martinez Dy et al., 2018). Digital skills and knowledge played a vital role in the incorporation of digital businesses with a better understanding of digital tools, digital platforms, and digital ecosystems for growth-oriented Digital Entrepreneurship through the digital transformation of businesses globally (Luo & Chan, 2021; Du et al.,2018).

#### 4.1.4. *Digital ecosystems*

Digital Entrepreneurship was considered a part of various digital entrepreneurial ecosystems, as it had been offering a digital environment for the smooth operation of diverse entrepreneurial activities. The digital ecosystem framework comprised four key concepts: (1) Digital Entrepreneurship, (2) infrastructure governance, (3) digital user citizenship, a diverse group of users distinguished by their primary activity as either consumers or producers and (4) a digital marketplace. However, a noteworthy gap occurred in the conceptualization of entrepreneurship in this contemporary digital era and, by investigating the ongoing digital innovations, the gaps could be filled (Sussan & Acs,

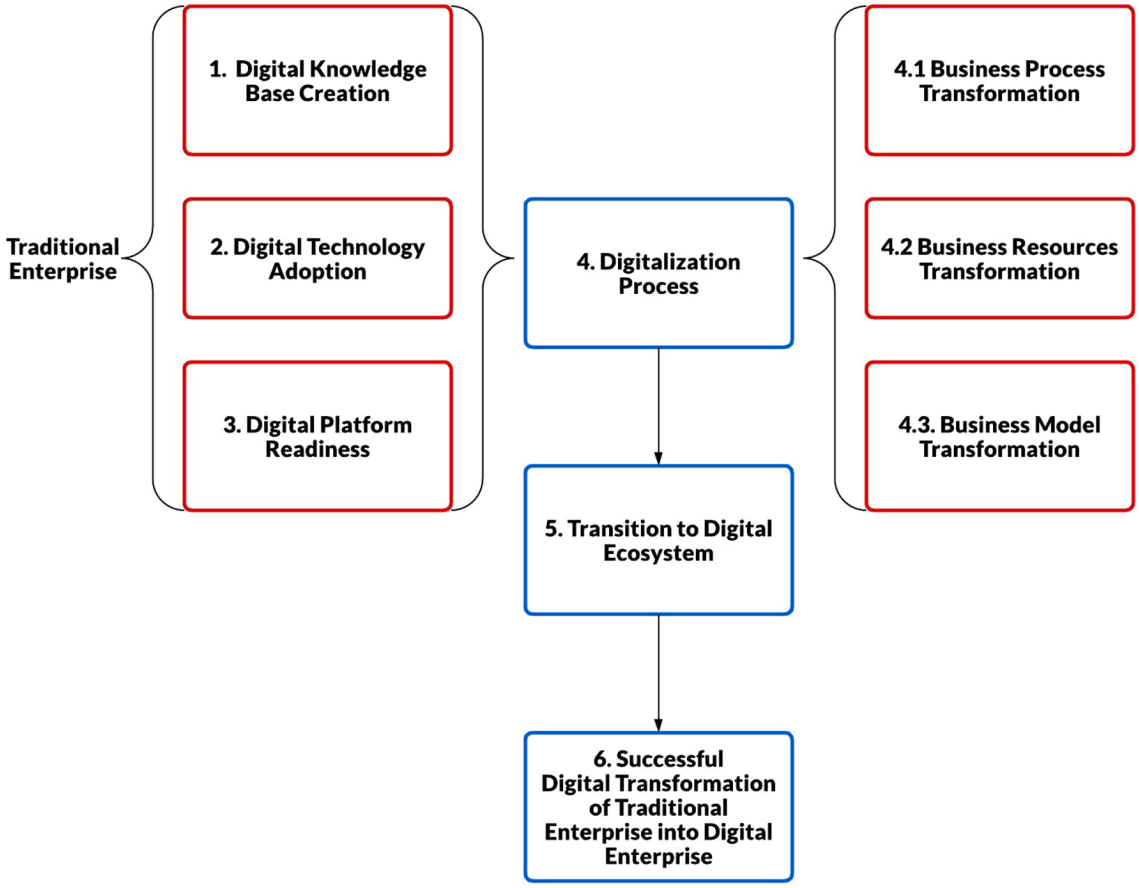



**Fig. 4.** Conceptual Model of Digital Entrepreneurship.

2017). Although digital innovation was becoming increasingly important in today's economy, many digital innovations were established not only inside businesses but also in innovation-led entrepreneurial ecosystems, in which various entrepreneurship-related stakeholders collaborate. Regardless of its importance, studies on digital ecosystems were limited, and the concept was largely unexplored (Huang et al., 2020). Although digital innovation was able to engineer an unexpected expansion of entrepreneurial start-ups, a few challenging business problems, and the ongoing Coronavirus Disease (COVID-19) pandemic catastrophe had increased the need to explore how technological digital innovation and human capital could be successfully combined to shape a robust socio-technical and digital ecosystem. The literature on entrepreneurial ecosystems began to reveal business network relationships between different stakeholders, as well as the role of context in diverse sectoral backdrops (Huang et al., 2020). In the context of the sports industry, in-depth interviews with football stakeholders in the sports entrepreneurship ecosystem led to an understanding of the occurrence of start-ups in the field of online or digital sports. It was found that the disruptive nature of digital ecosystems had a direct impact on new technological advances and hence different stakeholders, especially digital sports entrepreneurs, had to keep an eye on the ongoing transformations in the landscapes of digital sports. As part of this endeavor, digital entrepreneurial skills and digital competence might play a key role. Furthermore, in the 21st century, entrepreneurial skills and digital competence have been identified as fundamental elements of education, are transversal competencies in university degrees, and contribute to being a successful entrepreneur (Song, 2019). Hence, entrepreneurs must fill two key roles in digital ecosystems: either as an ecosystem member and a new digital venture, a start-up leader, or both. These roles are repeatedly mismatched and have, therefore, been causing role conflict and high levels of stress among entrepreneurs. This further reduces digital start-up performance by interfering with entrepreneurs' enactment of their key entrepreneurial activities in digital ecosystems in their journey to the world of digital business (Fossen & Sorgner, 2021).

Based on the results of the review of the literature, a summary table was prepared that describes the key findings identified in this study (see Table 10 in the Appendix). The four key themes employed in Digital Entrepreneurship research studies referred to above were synthesized to show the total number of articles identified for each theme. These exemplary studies were referenced in Table 5.

The reported frequencies indicated that the theme 'Digital technologies' was employed in 30.00 % of the selected articles, the theme 'Digital platforms' was employed in 17.50 % of the selected articles, the theme 'Digital transformation of businesses' was employed in 42.50 % of the selected articles, and the theme 'Digital ecosystems' was employed in 10.00 % of the selected articles.

### 4.2. *Contexts identified in digital entrepreneurship studies*

The geographical contexts of the research related to Digital Entrepreneurship studies considered in the review were tabulated to show the names of the countries and the total number of articles identified for each. These exemplary studies had been referenced in Table 6.

Based on the geographical contexts of this study, USA and China were in the first spot. Research studies in the USA context were specially conducted on key themes namely, Digital technologies, Digital platforms, and Digital ecosystems whereas in the geographical context of China, studies were conducted on key themes namely, Digital transformation of businesses, Digital platforms, and Digital ecosystems. However, Italy, Scotland, and the U.K were in the second spot based on the geographical contexts of this study. Surprisingly, Digital technologies and the Digital transformation of businesses were found to be the

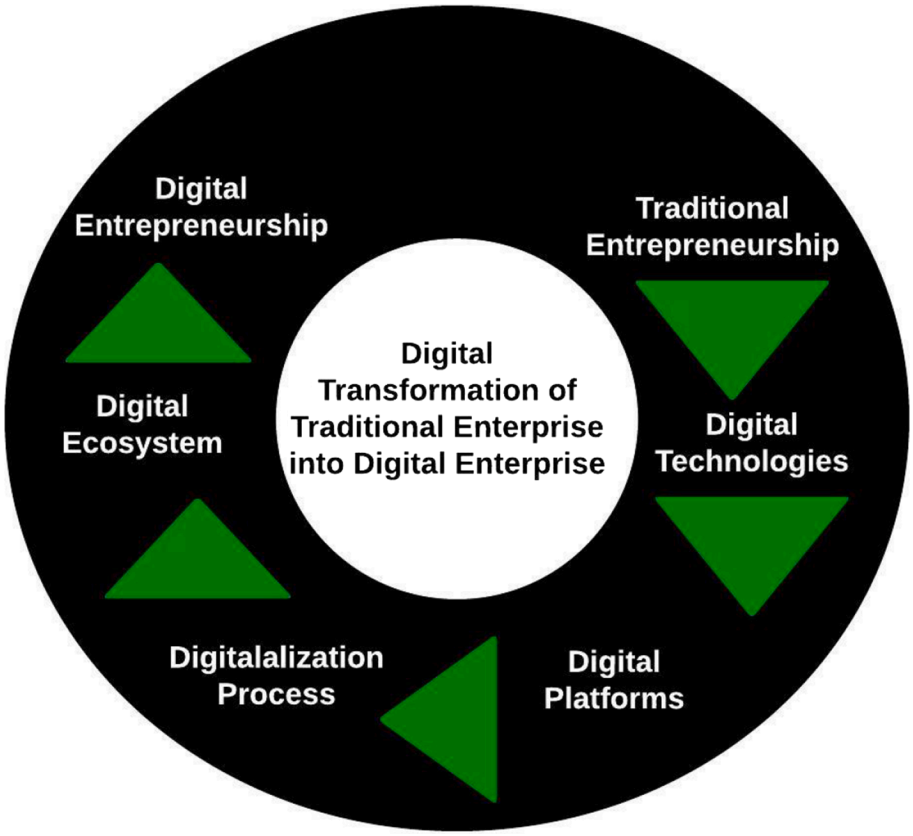



**Fig. 5.** Digital Entrepreneurship Orientation Cycle.

common themes investigated in the geographical contexts of these three countries.

Geographical contexts were not specified in some studies. France, Germany, India, and Norway were simultaneously in the third spot based on the geographical contexts in prior studies. Digital technologies, Digital platforms, Digital transformation of businesses, and Digital ecosystems were among the common themes of their respective studies. Other geographical contexts of identified studies on the common themes of their respective studies were related to countries such as Canada, European Union, Finland, Greece, Indonesia, Netherlands, Portugal, Saudi Arabia, etc. In nutshell, most of the research studies were conducted in the geographical context of the American and Asian continents, followed by Europe and African continents. There were no research studies observed in the Australian continent's geographical contexts, however, it might be possible that a few research studies under the not specified category may be related to the Australian continent (see Table 6 and Fig. 3).

### *4.3. Methodologies identified in digital entrepreneurship studies*

The methodologies employed in the studies relating to Digital Entrepreneurship research were synthesized and shown in Table 7.

The reported frequencies indicated that the quantitative approach was employed in 47.50 % of the selected articles and the qualitative approach was taken in 42.50 % of the selected articles, whereas the mixed approach was used only in 10.00 % of the selected articles. The next section of the study presents the conceptual model based on the review of the literature.

## 5. Conceptual model

A conceptual model of Digital Entrepreneurship is proposed in this section (based on the review) which would further assist traditional enterprises in their digital transformational journey into Digital enterprises (see Fig. 4).

This model consists of six steps namely: 1. Digital Knowledge Base Creation, 2. Digital Technology Adoption, 3. Digital Platform Readiness, 4. Digitalization Process (4.1 Business Process Transformation, 4.2 Business Resources Transformation, and 4.3 Business Model Transformation), 5. Transition to Digital Ecosystem, and 6. Successful Digital Transformation of Traditional Enterprise into Digital Enterprise. Using these six steps, a Traditional enterprise can go digital. It was observed in extant studies that most developed countries had been conducting several research studies related to Digital Entrepreneurship (Nambisan & Baron, 2021; Huang et al., 2020; Nambisan, 2017). Most countries from the American and European continents have started shifting from traditional business to digital business by employing Digital Entrepreneurship through the adoption of digital technologies and the readiness of digital platforms. However, in this digital era, global business landscapes have been witnessing a drastic and disruptive technological transformation due to alterations in the digital ecosystem of businesses globally, so businesses must keep an eye on all such occurrences to be in the race in the long run (see Fig. 4).

In addition to the conceptual model, we have further designed a Digital Entrepreneurship Orientation Cycle which is based on the review of the literature and is created to explain the transition from traditional entrepreneurship to Digital Entrepreneurship (see Fig. 5).

In the next section, future research avenues have been tabulated and proposed for further investigation by scholars, researchers, and academicians.

## 6. Future research avenues

Entrepreneurial models and practices have undergone major changes due to the problems caused by COVID 19 Pandemic (Gordon-Wilson, 2021; Yap et al., 2021; Rayburn et al., 2021: Kursan Milaković, 2021;

**Table 8**
Key research themes identified for future research studies.

| S. No. | Themes | Key research themes for future research studies |
|---|---|---|
| 1 | **Digital technologies** | • Further research investigation is desirable to observe the stimulus of digital technology on entrepreneurship in diverse geographical and sectoral contexts (Huang et al., 2020). How Digital technologies and Digital infrastructure can be external enablers of new venture formation & development (Huang et al., 2020; Nambisan, 2017). There is a need for further investigation into the ways a business can gain benefits from opportunities arising from the use of digital technologies (Vassilakopoulou & Grisot, 2020).There is a need for more research that focuses on a few parameters, such as business size, age, industry type, and market competition to investigate the impact of digital transformation of traditional businesses in diverse geographical and sectoral contexts (Kromidha & Robson, 2021). |
| 2 | **Digital platforms** | • Although digital platforms have become the need of the hour for global businesses as an important tool for entrepreneurs, little empirical research exists on how entrepreneurs connect using digital platforms to meet their business goals. Further probing is required (Taylor-Wesselink & Teulon, 2022).In the Digital platform, platform sponsors & complementors co-create value in its ecosystems. The way a digital platform ecosystem occurs in the embryonic stage, especially in a situation where value co-creation encompasses fascinating complementors to their platform sought further investigation (Murthy & Madhok, 2021).After examining the perceptions depicted in Digital Entrepreneurship literature, there is a need to identify the fundamental spatial and chronological dimensions of digital crowdfunding platforms (Ahsan & Musteen, 2021). |
| 3 | **Digital transformation of businesses** | • Digital transformation is of great relevance as digital technological developments and advances in digital infrastructure have created countless business opportunities for entrepreneurs. Very little research has been undertaken to understand the opportunities, challenges, and critical success factors of the digital transformation of businesses. More detailed studies would support existing and budding entrepreneurs in their entrepreneurial journey in the transformation of traditional business to digital business (Kraus et al., 2018).The growing ease of access to digital technologies has had an impact on the scope and nature of entrepreneurship activities and, through the Internet and digital platforms such as social media, entrepreneurs have been empowered to reach larger markets across geographical boundaries with potential impacts on the economic outcomes of their businesses. Therefore, there is a need to elucidate the key issues and challenges of businesses in their digital transformational journey (Vadana et al., 2019; Dy et al., 2018).In contrast with the traditional practices of entrepreneurship, entrepreneurs in digital businesses have been struggling a great deal. Further studies could be conducted to identify the impact of digital transformation on the existing business models of traditional businesses in diverse geographical and industrial settings (Sahut et al., 2021; Leung & Cossu, 2019). |
| 4 | **Digital ecosystems** | • Although the benefits delivered by digital platforms and their digital ecosystems to entrepreneurs are known, there is still a need to investigate further the related expenditures and shortcomings of digital ecosystems faced by entrepreneurs in diverse industry and geographical settings (Nambisan & Baron, 2021).Further studies can be conducted to identify how Digital ecosystems survive and grow over a period (Murthy & Madhok, 2021).Further studies to identify digital ecosystems and digital business factors are also recommended (Song, 2019; Sussan & Acs, 2017). |
| | **Other themes** | • Further investigation could be undertaken to identify the role of digital transformation in the orientation of Digital Entrepreneurship (Kromidha & Robson, 2021; Arvidsson & Monsted, 2018).Studies related to digital entrepreneurial intents, digital business, digital skills, digital strategies, and digital ecosystems are also recommended (Fossen & Sorgner, 2021). |

Nayal et al., 2021). For example, most business owners and managers prefer digital entrepreneurship and digital marketing these days (Arya et al., 2022; Hemsley-Brown, 2022; Chakraborty & Paul, 2022; Purohit, Arora & Paul, 2022; Chopdar et al., 2022; Basu, Paul & Singh, 2022).

In this section of the article, following classic reviews (Södergren, 2021; Nanda & Banerjee, 2021; Hassan, Rahman & Paul, 2022: Kajol, Singh & Paul, 2022; Srivastava et al., 2022), key research themes were tabulated suggesting further investigation by scholars, researchers, and academicians to add value to the body of knowledge related to the concept of Digital Entrepreneurship for better understanding and its implications in real-world settings (see Table 8).

Following prior reviews (Mariani & Borghi, 2019; Mariani et al., 2021; Hungara & Nobre, 2021; Thomas & Gupta, 2022), we provide a detailed agenda for future research by outlining some promising Future Research Questions (FRQs). The selected opportunities for future research in the field of Digital Entrepreneurship have been summarized based on the knowledge gaps (See Table 9) and pinpointed predominantly thought-provoking future research questions for further investigation.

The key Future Research Questions (FRQs) for the research gap themes are proposed based on the findings of the study for further investigation. First, our SLR highlights some important knowledge gaps about the theme of digital technologies and their application in businesses. Along with this, the key themes, contexts, and methodologies associated with the study of digital technologies (Kromidha & Robson, 2021; Vassilakopoulou & Grisot, 2020; Huang et al., 2020; Nambisan, 2017). Second, we need to know how digital platforms are beneficial for businesses in achieving their business goals and the key themes, contexts, and methodologies associated with the study of digital platforms related studies (Taylor-Wesselink & Teulon, 2022; Murthy & Madhok, 2021; Ahsan & Musteen, 2021). Third, it becomes very important to uncover the impact of digital transformation on businesses and the key opportunities, challenges, and critical success factors of Digital Entrepreneurship in the global business scenario in the light of digital transformation. While investigating this theme, the key themes, contexts, and methodologies associated with the digital transformation of businesses are recommended for detailed probing (Sahut et al., 2021; Leung & Cossu, 2019; Vadana et al., 2019; Dy et al., 2018; Kraus et al., 2018).

**Table 9**
Directions for future research in the field of Digital Entrepreneurship based on the SLR.

| Research Gap Themes | Future Research Questions (FRQs) |
|---|---|
| Theme 1: Digital technologies | RQ1: What are the key digital technologies used by businesses for transition to digital enterprises?<br>RQ2: In what ways digital technologies can support the creation of a new venture and transform existing businesses into digital businesses?<br>RQ3: In what ways a business can gain benefits from opportunities arising from the use of digital technologies during their transformation from the traditional enterprise to the digital enterprise?<br>RQ4: What are the impacts of digital technologies on the digital transformation and internationalization of businesses?<br>RQ5: What is current status of acceptance and adoption of digital technologies among traditional businesses globally for sustainable business development? |
| Theme 2: Digital platforms | RQ1: What are the key digital platforms used by businesses in diverse geographical contexts?<br>RQ2: How entrepreneurs can use digital platforms to go digital?<br>RQ3: What are the key themes, contexts, and methodologies employed in the study of digital platforms for the digitalization of traditional businesses? |
| Theme 3: Digital transformation of businesses | RQ1: What are the impacts of digital transformation on the business?<br>RQ2: What are the key opportunities, challenges, and critical success factors of Digital Entrepreneurship in the global business scenario considering digital transformation?<br>RQ3: What are the key themes, contexts, and methodologies employed in the study of the digital transformation of businesses? |
| Theme 4: Digital ecosystems | RQ1: What are the key components of Digital ecosystems?<br>RQ2: What are the determinants of digital ecosystems and their associated behaviors that led to the success or failure of digital businesses?<br>RQ3: How does the traditional ecosystem differ from the digital ecosystem from the global business perspective?<br>RQ4: What are the key themes, contexts, and methodologies employed in the study of digital ecosystems of digital businesses? |
| Other themes:<br>Theme 5: Digital Entrepreneurship in the light of the COVID-19 pandemic | RQ1: What are the key themes, contexts, and methodologies employed in the study of Digital Entrepreneurship?<br>RQ2: What is the impact of the COVID-19 pandemic on the advancement of Digital Entrepreneurship during this pandemic?<br>RQ3: What are the ways to overcome the impact of the COVID-19 on the digitalization of traditional business into a digital business?<br>RQ4: How does entrepreneurship differ from Digital Entrepreneurship? |
| Other themes:<br>Theme 6: Digital Entrepreneurship using the Bibliometric approach | RQ1: Who are the main scholars taking the Digital Entrepreneurship research forward?<br>RQ2: Where are they from, and what are their institutional affiliations and collaboration outcomes?<br>RQ3: Which research themes are represented in the Digital Entrepreneurship literature? |

Fourth, there is a need to detect the key components of Digital ecosystems and their determinants and their associated behaviors that led to the success or failure of digital businesses. The key themes, contexts, and methodologies associated with this phenomenon seek further investigation (Murthy & Madhok, 2021; Nambisan & Baron, 2021; Song, 2019; Sussan & Acs, 2017). In addition to these stated themes, Fifth, to uncover the impact of the COVID-19 pandemic on the advancement of Digital Entrepreneurship during this pandemic, further study is recommended that would assist businesses in learning the ways to overcome the impact of the COVID-19 on the digitalization of traditional businesses into a digital business. Sixth and finally several future research questions on Digital Entrepreneurship propose to conduct a study using a Bibliometric approach to further investigate the key scholars, countries of research, scholar affiliation, and key themes for knowing the status of ongoing research in the field of Digital Entrepreneurship.

In the next section, the summary of this review is given as conclusions.

## 7. Conclusions

The world is moving toward digitalization by transforming itself into a virtual world and the phenomenon of Entrepreneurship is following the digitalization trends quietly to transform into Digital Entrepreneurship. Many new phenomena are evolving nowadays, and Digital Entrepreneurship, is thus quite a talked about phenomenon in today's time. This study systematically reviews existing contemporary literature in the field of Digital Entrepreneurship to quicken thematic development on this phenomenon by investigating all its correlated key themes through extracting, selecting, and reviewing the literature on Digital Entrepreneurship to provide guidance for researchers with acumen in the conceptualization of Digital Entrepreneurship as a multi-disciplinary area of research and assist businesses in shifting from traditional to digital businesses.

A systematic literature review approach was employed to search, identify, extract, and select relevant articles (Södergren, 2021; Srivastava et al., 2022) using globally renowned electronic databases with the help of search keywords and by employing the TCM framework, the key themes, contexts, and methodologies were identified in this study related to the field of Digital Entrepreneurship. Four key themes namely, Digital technologies, Digital platforms, Digital transformation of businesses, and Digital ecosystems were identified in this study. The geographical contexts of the study were investigated based on the country of research and it was found that USA and China were among the leading countries that had been conducting research in this field. The identified methodologies used in the existing research of this field of study would a give more comprehensive view to the academicians and researchers in turn help future researchers to identify whether they can employ the same methods or new methods in their further research studies. Our study has offered the future research questions and future research themes which make this study different from similar studies conducted on the concept of Digital Entrepreneurship using a SLR approach in the past as no one has proposed future research questions, key research themes along with conceptual model (Nambisan, 2017; Kraus et al., 2018; Zaheer et al., 2019; Satalkina & Steiner, 2020). This paper has provided the below practical insights for businesses and their managers who want to shift from a traditional business model to a digital business model. Using the proposed conceptual model, modern traditional businesses could start their journey of digital transformation by following the six steps stated in the proposed conceptual model. Managers of those businesses might refer to this model as a manual for the digital transformation of their existing traditional business. The contents of this study would act as a helping hand for traditional businesses in understanding and identifying the key opportunities, challenges, and critical success factors of Digital Entrepreneurship in the highly competitive global business scenario in the light of digital transformation. In addition to this, entrepreneurs who have been

**Table 10**
Summary table of notable key findings (Themes, Contexts, and Methodologies) identified based on the results of reviews of the selected literature in Digital entrepreneurship studies.

| S. No. | Journal | Article | Author(s) | Year of publication | Key findings: Themes, Contexts, and Methodologies identified based on the results of reviews of the selected literature |
|---|---|---|---|---|---|
| 1 | Canadian Journal of Administrative Sciences | Digital entrepreneurship: Some features of new social interactions | Braune, E., & Dana, L.-P. | 2021 | **Theme:** Digital technologies **Context:** Canada **Methodology:** Qualitative approach |
| 2 | Canadian Journal of Administrative Sciences | The interaction and influence of digital and non-digital structures, cultures and social norms on entrepreneurship | Taylor-Wesselink, K., & Teulon, F. | 2021 | **Theme:** Digital platforms **Context:** Trinidad and Tobago **Methodology:** Quantitative approach |
| 3 | International Entrepreneurship and Management Journal | Exploring the determinants of digital entrepreneurship using fuzzy cognitive maps | Ladeira, M. J., Ferreira, F. A., Ferreira, J. J., Fang, W., Falcao, P. F., & Rosa, Á. A. | 2019 | **Theme:** Digital transformation of businesses **Context:** Portugal **Methodology:** Quantitative approach |
| 4 | International Entrepreneurship and Management Journal | The state of #digitalentrepreneurship: A big data Leximancer analysis of social media activity | Wilk, V., Cripps, H., Capatina, A., Micu, A., & Micu, A.-E. | 2021 | **Theme:** Digital transformation of businesses **Context:** Not specified **Methodology:** Mixed method approach |
| 5 | Small Business Economics | The age of digital entrepreneurship | Sahut J.-M., Iandoli, L., & Teulon, F. | 2021 | **Theme:** Digital transformation of businesses **Context:** France **Methodology:** Qualitative approach |
| 6 | Small Business Economics | Digital girl: Cyberfeminism and the emancipatory potential of digital entrepreneurship in emerging economies | McAdam, M., Crowley, C., & Harrison, R. T. | 2020 | **Theme:** Digital transformation of businesses **Context:** Saudi Arabia **Methodology:** Quantitative approach |
| 7 | Small Business Economics | The digital entrepreneurial ecosystem | Sussan, F., & Acs, Z. | 2017 | **Theme:** Digital ecosystems **Context:** USA **Methodology:** Qualitative approach |
| 8 | Small Business Economics | The digital entrepreneurial ecosystem – a critique and reconfiguration | Song, A. K. | 2019 | **Theme:** Digital ecosystems **Context:** USA **Methodology:** Qualitative approach |
| 9 | Small Business Economics | Why do startups pursue initial coin offerings (ICOs)? The role of economic drivers and social identity on funding choice. | Schückes, Magnus; Gutmann, Tobias | 2021 | **Theme:** Digital transformation of businesses **Context:** Germany **Methodology:** Quantitative approach |
| 10 | Journal of Business Research | On the costs of digital entrepreneurship: Role conflict, stress, and venture performance in digital platform-based ecosystems | Nambisan, S., & Baron, R. A. | 2021 | **Theme:** Digital platforms **Context:** USA **Methodology:** Quantitative approach |
| 11 | Journal of Business Research | Get the show on the road: Go-to-market strategies for e-innovations of start-ups | Kuester, S., Konya-Baumbach, E., & Schuhmacher, M. C. | 2018 | **Theme:** Digital transformation of businesses **Context:** Germany **Methodology:** Qualitative approach |
| 12 | Journal of Business Research | Digitalization of work and entry into entrepreneurship | Fossen, F. M., & Sorgner, A. | 2021 | **Theme:** Digital transformation of businesses **Context:** Italy **Methodology:** Quantitative approach |
| 13 | Technological Forecasting and Social Change | Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process | Elia, G., Margherita, A., & Passiante, G. | 2020 | **Theme:** Digital technologies **Context:** Italy **Methodology:** Qualitative approach |
| 14 | Technological Forecasting and Social Change | Digital Academic Entrepreneurship: A structured literature review and avenue for a research agenda | Secundo, G., Rippa, P., & Cerchione, R. | 2020 | **Theme:** Digital technologies **Context:** Italy **Methodology:** Qualitative approach |
| 15 | Technological Forecasting and Social Change | Digital entrepreneurship in developing countries: The role of institutional voids | Soluk, J., Kammerlander, N., & Darwin, S. | 2021 | **Theme:** Digital technologies **Context:** India **Methodology:** Quantitative approach |
| 16 | Technological Forecasting and Social Change | | Gupta, G., & Bose, I. | 2019 | **Theme:** Digital technologies **Context:** India |

(*continued on next page*)

**Table 10** (*continued*)

| S. No. | Journal | Article | Author(s) | Year of publication | Key findings: Themes, Contexts, and Methodologies identified based on the results of reviews of the selected literature |
|---|---|---|---|---|---|
| | | Strategic learning for digital market pioneering: Examining the transformation of Wishberry's crowdfunding model | | | **Methodology:** Quantitative approach |
| 17 | Technological Forecasting and Social Change | Moving a mountain with a teaspoon: Toward a theory of digital entrepreneurship in the regulatory environment | Dong, J. Q. | 2019 | **Theme:** Digital transformation of businesses **Context:** Netherlands **Methodology:** Quantitative approach |
| 18 | Technology Analysis & Strategic Management | How digital user innovators become entrepreneurs: A socio-material analysis | Schiavone, F., Tutore, I., & Cucari, N. | 2020 | **Theme:** Digital transformation of businesses **Context:** France **Methodology:** Qualitative approach |
| 19 | International Journal of Entrepreneurial Behavior & Research | Digital entrepreneurship: A research agenda on new business models for the twenty-first century | Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. | 2018 | **Theme:** Digital transformation of businesses **Context:** China **Methodology:** Qualitative approach |
| 20 | Journal of Strategic Information Systems | Effectual tactics in digital intrapreneurship: A process model | Vassilakopoulou, P., & Grisot, M. | 2020 | **Theme:** Digital technologies **Context:** Norway **Methodology:** Quantitative approach |
| 21 | Journal of Strategic Information Systems | Generating innovation potential: How digital entrepreneurs conceal, sequence, anchor, and propagate new technology | Arvidsson, V., & Mønsted, T. | 2018 | **Theme:** Digital technologies **Context:** Norway **Methodology:** Quantitative approach |
| 22 | International Business Review | International opportunity development on crowdfunding platforms: A spatial, temporal, and structural framework | Ahsan, M., & Musteen, M. | 2021 | **Theme:** Digital platforms **Context:** USA **Methodology:** Qualitative approach |
| 23 | Entrepreneurship Theory and Practice | Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship | Nambisan, S. | 2017 | **Theme:** Digital technologies **Context:** USA **Methodology:** Qualitative approach |
| 24 | Organization | Emancipation through digital entrepreneurship? A critical realist analysis | Martinez Dy, A., Martin, L., & Marlow, S. | 2018 | **Theme:** Digital transformation of businesses **Context:** UK **Methodology:** Quantitative approach |
| 25 | Creativity and Innovation Management | Why do startups pursue initial coin offerings (ICOs)? The role of economic drivers and social identity on funding choice. | Park, Hyunkyu; Kim, Sojung; Jeong, Yujin; Minshall, Tim | 2021 | **Theme:** Digital platforms **Context:** China **Methodology:** Mixed method approach |
| 26 | Journal of Business Venturing | The CAGE around cyberspace? How digital innovations internationalize in a virtual world | Shaheer, Noman Ahmed; Li, Sali | 2020 | **Theme:** Digital platforms **Context:** Not specified **Methodology:** Qualitative approach |
| 27 | International Marketing Review | Digitalization of companies in international entrepreneurship and marketing | Vadana, I.-I., Torkkeli, L., Kuivalainen, O., & Saarenketo, S. | 2019 | **Theme:** Digital transformation of businesses **Context:** Finland **Methodology:** Quantitative approach |
| 28 | Information & Management | The emancipatory potential of digital entrepreneurship: A study of financial technology-driven inclusive growth | Leong, C., Tan, F. T. C., Tan, B., & Faisal, F. | 2020 | **Theme:** Digital transformation of businesses **Context:** Indonesia **Methodology:** Quantitative approach |
| 29 | Futures | The engagement of home-based businesses in the digital economy | Reuschke, D., & Mason, C. | 2020 | **Theme:** Digital technologies **Context:** Scotland **Methodology:** Quantitative approach |
| 30 | Futures | Digital futures of small businesses and entrepreneurial opportunity | Darja Reuschke, Colin Mason, Stephen Syrett, | 2021 | **Theme:** Digital technologies **Context:** Scotland **Methodology:** Qualitative approach |
| 31 | Futures | Levelling the playing field? Towards a critical-social perspective on digital entrepreneurship | Angela Martinez Dy, | 2019 | **Theme:** Digital transformation of businesses **Context:** Scotland **Methodology:** Qualitative approach |
| 32 | International Journal of Information Management | What do growing early-stage digital start-ups look like? A mixed-methods approach | Griva, A., Kotsopoulos, D., Karagiannaki, A., & Zamani, E. D. | 2021 | **Theme:** Digital transformation of businesses **Context:** Greece |

(*continued on next page*)

**Table 10** (*continued*)

| S. No. | Journal | Article | Author(s) | Year of publication | Key findings: Themes, Contexts, and Methodologies identified based on the results of reviews of the selected literature |
|---|---|---|---|---|---|
| | | | | | **Methodology:** Mixed method approach |
| 33 | Technology in Society | On the upside or flipside: Where is venture capital positioned in the era of digital disruptions? | Khan, M. Z., Khan, Z. U., Hameed, A., & Zada, S. S. | 2021 | **Theme:** Digital platforms **Context:** European Union **Methodology:** Quantitative approach |
| 34 | Cities | Gendered digital entrepreneurship in gendered coworking spaces: Evidence from Shenzhen, China | Luo, Y., & Chan, R. C. K. | 2021 | **Theme:** Digital transformation of businesses **Context:** China **Methodology:** Quantitative approach |
| 35 | Entrepreneurship & Regional Development | Contextualization of Chinese entrepreneurship research: an overview and some future research directions | Qihai Huang, Xueyuan Liu &Jun Li | 2020 | **Theme:** Digital ecosystems **Context:** China **Methodology:** Qualitative approach |
| 36 | Journal of Management Studies | Overcoming the Early-stage Conundrum of Digital Platform Ecosystem Emergence: A Problem-Solving Perspective | Ramya K. Murthy, Anoop Madhok | 2021 | **Theme:** Digital platforms **Context:** Not specified **Methodology:** Mixed method approach |
| 37 | Information System Journal | From a marketplace of electronics to a digital entrepreneurial ecosystem (DEE): The emergence of a meta-organization in Zhongguancun, China. | Du, Wenyu (Derek); Pan, Shan L.; Zhou, Ning; Ouyang, Taohua | 2018 | **Theme:** Digital transformation of businesses **Context:** China **Methodology:** Qualitative approach |
| 38 | Tourism Review | Big data and analytics in tourism and hospitality: A perspective article | Mariani, M. | 2019 | **Theme:** Digital technologies **Context:** UK **Methodology:** Qualitative approach |
| 39 | International Journal of Cultural Studies | Digital entrepreneurship in Taiwan and Thailand: Embracing precarity as a personal response to political and economic change | Leung, W. F., & Cossu, A. | 2019 | **Theme:** Digital transformation of businesses **Context:** Taiwan and Thailand **Methodology:** Quantitative approach |
| 40 | International Small Business Journal | The role of digital presence and investment network signals on the internationalisation of small firms | Kromidha, E., & Robson, P. J. | 2021 | **Theme:** Digital technologies **Context:** UK **Methodology:** Quantitative approach |

struggling, succeeding, or collapsing during their entrepreneurial journeys, and endeavors to establish a digital start-up might get a tool to update their conceptual understandings. Hence, it has become very important for businesses and academicians to investigate this phenomenon for the further knowledge enhancement of all their stakeholders and this study will support them in enhancing their existing knowledge base. The future research avenues identified in this study would enhance the understanding of budding scholars, researchers, and academicians globally by expanding their overall knowledge of the field of Digital Entrepreneurship. Key research themes tabulated in this study could be employed by them for further investigations. Moreover, this would add value to the body of their knowledge related to this phenomenon and its implications in real-world settings and this would be the academic implications of this study. Digitalization has disrupted traditional businesses globally through its digital transformational impacts on their existing entrepreneurial landscape. A business requires sound conceptual knowledge related to Digital Entrepreneurship while shifting to digital business and at the same time, it becomes very vital for researchers to research this new phenomenon. This current study is an attempt to fill the knowledge gap created due to the transition from traditional to digital businesses.

## CRediT authorship contribution statement

**Justin Paul:** Methodology, Investigation, Formal analysis, Conceptualization. **Ibrahim Alhassan:** Investigation, Data curation, Conceptualization. **Nasser Binsaif:** Investigation, Data curation, Conceptualization. **Prakash Singh:** Formal analysis, Data curation, Conceptualization.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

No data was used for the research described in the article.

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## References

Ahsan, M., & Musteen, M. (2021). International opportunity development on crowdfunding platforms: A spatial, temporal, and structural framework. *International Business Review, 30*(6), Article 101912. https://doi.org/10.1016/j.ibusrev.2021.101912

Anim-Yeboah, S., Boateng, R., Awuni Kolog, E., Owusu, A., & Bedi, I. (2020). Digital entrepreneurship in business enterprises: A systematic review. In *Conference on E-*

*Business, E-Services And E-Society* (pp. 192–203). Cham: Springer. https://doi.org/10.1007/978-3-030-44999-5_16.
Arvidsson, V., & Mønsted, T. (2018). Generating innovation potential: How digital entrepreneurs conceal, sequence, anchor, and propagate new technology. *Journal of Strategic Information Systems, 27*(4), 369–383. https://doi.org/10.1016/j.jsis.2018.10.001
Arya, V., Paul, J., & Sethi, D. (2022). Like it or not! Brand communication on social networking sites triggers consumer-based brand equity. *International Journal of Consumer Studies, 46*(4), 1381–1398.
Autio, E. (2018). Creative tension: The Significance of Ben Oviatt's and Patricia McDougall's article 'Toward a Theory of International New Ventures'. *Journal of International Entrepreneurship, 59–81*. https://doi.org/10.1057/palgrave.jibs.8400117
Basu, R., Paul, J., & Singh, K. (2022). Visual merchandising and store atmospherics: An integrated review and future research directions. *Journal of Business Research, 151*, 397–408.
Beckman, C., Eisenhardt, K., Kotha, S., Meyer, A., & Rajagopalan, N. (2012). Technology entrepreneurship. *Strategic Entrepreneurship Journal, 6*, 89–93. https://doi.org/10.1002/sej.1134
Billore, S., & Anisimova, T. (2021). Panic buying research: A systematic literature review and future research agenda. *International Journal of Consumer Studies, 45*(4), 777–804.
Braune, E., & Dana, L. P. (2021). Digital entrepreneurship: Some features of new social interactions. *Canadian Journal of Administrative Sciences*. https://doi.org/10.1002/cjas.1653
Brouthers, K. D., Geisser, K. D., & Rothlauf, F. (2016). Explaining the internationalization of ibusiness firms. *Journal of International Business Studies, 47*(5), 513–534. https://doi.org/10.1057/jibs.2015.20
Chakraborty, D., & Paul, J. (2022). Healthcare apps' purchase intention: A consumption values perspective. *Technovation*. https://doi.org/10.1016/j.technovation.2022.102481
Chopdar, P. K., Paul, J., & Prodanova, J. (2022). Mobile shoppers' response to Covid-19 phobia, pessimism and smartphone addiction: Does social influence matter? *Technological Forecasting and Social Change, 174*, Article 121249.
Chen, L., Shaheer, N., & Yi, J. (2019). The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout. *Journal of International Business Studies, 50*(2), 172–192. https://doi.org/10.1057/s41267-018-0176-2
Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies, 47*(6), 1154–1191. https://doi.org/10.1111/j.1467-6486.2009.00880.x
Cubric, M. (2020). Drivers, barriers and social considerations for AI adoption in business and management: A tertiary study. *Technology in Society, 62*, Article 101257. https://doi.org/10.1016/j.techsoc.2020.101257
Davidson, E., & Vaast, E. (2010). Digital entrepreneurship and its sociomaterial enactment. *In: Proceedings of the 43rd Hawaii International Conference on System Sciences, Honolulu*. IEEE Xplore, 1–10. https://doi.org/10.1109/HICSS.2010.150.
Dong, J. Q. (2019). Moving a mountain with a teaspoon: Toward a theory of digital entrepreneurship in the regulatory environment. *Technological Forecasting and Social Change, 146*, 923–930. https://doi.org/10.1016/j.techfore.2018.07.050
Du, W., Pan, S. L., Zhou, N., & Ouyang, T. (2018). From a marketplace of electronics to a digital entrepreneurial ecosystem (DEE): The emergence of a meta-organization in Zhongguancun, China. *Information Systems Journal, 28*(6), 1158–1175. https://doi.org/10.1111/isj.12176
Dy, A. M. (2019). Levelling the playing field? Towards a critical-social perspective on digital entrepreneurship. *Futures, 102438*. https://doi.org/10.1016/j.futures.2019.102438
Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change, 150*, Article 119791. https://doi.org/10.1016/j.techfore.2019.119791
Engel, J. S. (2015). Global clusters of innovation: Lessons from Silicon Valley. *California Management Review, 57*(2), 36–65. https://doi.org/10.1525%2Fcmr.2015.57.2.36.
Fossen, F. M., & Sorgner, A. (2021). Digitalization of work and entry into entrepreneurship. *Journal of Business Research, 125*, 548–563. https://doi.org/10.1016/j.jbusres.2019.09.019
Garfield, C. (1986). *Peak Performers: The New Heroes of American Business*. Now York: Avon Books.
Gartner, W. B. (1985). A Conceptual Framework for Describing the Phenomena of New Venture Creation. *Academy of Management Review, 10*, 696–706. https://www.jstor.org/stable/258039?origin=JSTOR-pdf.
Gartner, W. B. (1989). "Who is an Entrepreneur?" Is the Wrong Question. *Entrepreneurship Theory and Practice, 13*(4), 47–68. https://doi.org/10.1177/104225878901300406
Ghezzi, A., & Cavallo, A. (2020). Agile business model innovation in digital entrepreneurship: Lean startup approaches. *Journal of Business Research, 110*, 519–537. https://doi.org/10.1016/j.jbusres.2018.06.013
Ginsberg, A., & Venkatraman, N. (1985). Contingency perspectives of organizational strategy: A critical review of the empirical research. *Academy of Management Review, 10*(3), 421–434. https://doi.org/10.5465/amr.1985.4278950
Gordon-Wilson, S. (2021). Consumption practices during the COVID-19 crisis. *International Journal of Consumer Studies*. https://doi.org/10.1111/ijcs.12701
Hemsley-Brown, J. (2022). Antecedents and consequences of brand attachment: A literature review and research agenda. *International Journal of Consumer Studies*.
Griva, A., Kotsopoulos, D., Karagiannaki, A., & Zamani, E. D. (2021). What do growing early-stage digital start-ups look like? A mixed-methods approach. *International Journal of Information Management, 102427*. https://doi.org/10.1016/j.ijinfomgt.2021.102427
Gupta, G., & Bose, I. (2019). Strategic learning for digital market pioneering: Examining the transformation of Wishberry's crowdfunding model. *Technological Forecasting and Social Change, 146*, 865–876. https://doi.org/10.1016/j.techfore.2018.06.020
Hassan, S. M., Rahman, Z., & Paul, J. (2022). Consumer ethics: A review and research agenda. *Psychology & Marketing, 39*(1), 111–130.
Huang, J., Henfridsson, O., Liu, M. J., & Newell, S. (2017). Growing on steroids: Rapidly scaling the user base of digital ventures through digital innovation. *MIS Quarterly, 41*(1), 301–314. https://doi.org/10.25300/MISQ/2017/41.1.16.
Huang, Q., Liu, X., & Li, J. (2020). Contextualization of Chinese entrepreneurship research: An overview and some future research directions. *Entrepreneurship & Regional Development, 32*(5–6), 353–369. https://doi.org/10.1080/08985626.2019.1640437
Hull, C. E. K., Hung, Y. T. C., Hair, N., Victor, P., & DeMartino, R. (2007). Taking advantage of digital opportunities: A typology of digital entrepreneurship. *International Journal of Networking and Virtual Organizations, 4*, 290–303. https://doi.org/10.1504/IJNVO.2007.015166
Hungara, A., & Nobre, H. (2021). A consumer culture theory perspective of the marketplace: An integrative review and agenda for research. *International Journal of Consumer Studies, 45*(4), 805–823. https://doi.org/10.1111/ijcs.12670
Kajol, K., Singh, R., & Paul, J. (2022). Adoption of digital financial transactions: A review of literature and future research agenda. *Technological Forecasting and Social Change, 184*, Article 121991.
Khan, M. Z., Khan, Z. U., Hameed, A., & Zada, S. S. (2021). On the upside or flipside: Where is venture capital positioned in the era of digital disruptions? *Technology in Society, 65*, Article 101555. https://doi.org/10.1016/j.techsoc.2021.101555
Khlystova, O., Kalyuzhnova, Y., & Belitski, M. (2022). The impact of the COVID-19 pandemic on the creative industries: A literature review and future research agenda. *Journal of Business Research, 139*, 1192–1210. https://doi.org/10.1016/j.jbusres.2021.09.062
Kitchenham, B., & Charters, S. (2007). *Guidelines for performing systematic literature reviews in software engineering*. School of Computer Science and Mathematics, Keele University. Technical Report EBSE-2007-01,.
Klassen, T. P., Jadad, A. R., & Moher, D. (1998). Guides for reading and interpreting systematic reviews: I. Getting started. *Archives of Pediatrics & Adolescent Medicine, 152*(7), 700–704. https://doi.org/10.1001/archpedi.152.7.700
Kollmann, T. (2006). What is e-entrepreneurship? Fundamentals of company founding in the net economy. *Int J Technol Manag, 33*, 322–340. https://doi.org/10.1504/IJTM.2006.009247
Kollmann, T., Kleine-Stegemann, L., de Cruppe, K., & Then-Bergh, C. (2022). Eras of Digital Entrepreneurship. *Business and Information Systems Engineering, 64*(1), 15–31. https://doi.org/10.1007/s12599-021-00728-6
Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2018). Digital entrepreneurship: A research agenda on new business models for the twenty-first century. *International Journal of Entrepreneurial Behavior & Research*. https://doi.org/10.1108/IJEBR-06-2018-0425
Kromidha, E., & Robson, P. J. (2021). The role of digital presence and investment network signals on the internationalisation of small firms. *International Small Business Journal, 39*(2), 109–129. https://doi.org/10.1177%2F0266242620958898.
Kuester, S., Konya-Baumbach, E., & Schuhmacher, M. C. (2018). Get the show on the road: Go-to-market strategies for e-innovations of start-ups. *Journal of Business Research, 83*, 65–81. https://doi.org/10.1016/j.jbusres.2017.09.037
Kursan Milaković, I. (2021). Purchase experience during the COVID-19 pandemic and social cognitive theory: The relevance of consumer vulnerability, resilience, and adaptability for purchase satisfaction and repurchase. *International Journal of Consumer Studies*. https://doi.org/10.1111/ijcs.12672
Ladeira, M. J., Ferreira, F. A., Ferreira, J. J., Fang, W., Falcão, P. F., & Rosa, Á. A. (2019). Exploring the determinants of digital entrepreneurship using fuzzy cognitive maps. *International Entrepreneurship and Management Journal, 15*(4), 1077–1101. https://doi.org/10.1007/s11365-019-00574-9
Le Dinh, T., Vu, M. C., & Ayayi, A. (2018). Towards a living lab for promoting the digital entrepreneurship process. *International Journal of Entrepreneurship, 22*(1), 1–17.
Leong, C., Tan, F. T. C., Tan, B., & Faisal, F. (2020). The emancipatory potential of digital entrepreneurship: A study of financial technology-driven inclusive growth. *Information & Management, 103384*. https://doi.org/10.1016/j.im.2020.103384
Leung, W. F., & Cossu, A. (2019). Digital entrepreneurship in Taiwan and Thailand: Embracing precarity as a personal response to political and economic change. *International Journal of Cultural Studies, 22*(2), 264–280. https://doi.org/10.1177%2F1367877918821234.
Levy, Y., & Ellis, T. J. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science, 9*.
Luo, Y., & Chan, R. C. (2021). Gendered digital entrepreneurship in gendered coworking spaces: Evidence from Shenzhen, China. *Cities, 119*, Article 103411. https://doi.org/10.1016/j.cities.2021.103411
Mariani, M. (2019). Big data and analytics in tourism and hospitality: A perspective article. *Tourism Review, 75*(1), 299–303. https://doi.org/10.1108/TR-06-2019-0259
Mariani, M. M., Al-Sultan, K., & De Massis, A. (2021). Corporate social responsibility in family firms: A systematic literature review. *Journal of Small Business Management, 1–55*. https://doi.org/10.1080/00472778.2021.1955122
Mariani, M., & Borghi, M. (2019). Industry 4.0: A bibliometric review of its managerial intellectual structure and potential evolution in the service industries. *Technological Forecasting and Social Change, 149*, Article 119752. https://doi.org/10.1016/j.techfore.2019.119752

Martinez Dy., A., Martin, L., & Marlow, S. (2018). Emancipation through digital entrepreneurship? A critical realist analysis. Organization, 25(5), 585-608. https://doi.org/10.1177%2F1350508418777891.

Mariani, M. M., Machado, I., Magrelli, V., & Dwivedi, Y. K. (2022a). Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions. *Technovation, 102623*. https://doi.org/10.1016/j.technovation.2022.102623

Mariani, M. M., Perez-Vega, R., & Wirtz, J. (2022b). AI in marketing, consumer research and psychology: A systematic literature review and research agenda. *Psychology & Marketing, 39*(4), 755–776. https://doi.org/10.1002/mar.21619

McAdam, M., Crowley, C., & Harrison, R. T. (2020). Digital girl: Cyberfeminism and the emancipatory potential of digital entrepreneurship in emerging economies. *Small Business Economics, 55*(2), 349–362. https://doi.org/10.1007/s11187-019-00301-2

McKelvie, A., Haynie, J. M., & Gustavsson, V. (2011). Unpacking the uncertainty construct: Implications for entrepreneurial action. *Journal of Business Venturing, 26*(3), 273–292. https://doi.org/10.1016/j.jbusvent.2009.10.004

Merigó, J. M., Mas-Tur, A., Roig-Tierno, N., & Ribeiro-Soriano, D. (2015). A bibliometric overview of the Journal of business research between 1973 and 2014. *Journal of Business Research, 68*(12), 2645–2653. https://doi.org/10.1016/j.jbusres.2015.04.006

Mishra, R., Singh, R. K., & Koles, B. (2021). Consumer decision-making in Omnichannel retailing: Literature review and future research agenda. *International Journal of Consumer Studies, 45*(2), 147–174. https://doi.org/10.1111/ijcs.12617

Murthy, R. K., & Madhok, A. (2021). Overcoming the early-stage conundrum of digital platform ecosystem emergence: A problem-solving perspective. *Journal of Management Studies, 58*(7), 1899–1932. https://doi.org/10.1111/joms.12748

Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice, 41*(6), 1029–1055. https://doi.org/10.1111/etap.12254

Nambisan, S., & Baron, R. A. (2021). On the costs of digital entrepreneurship: Role conflict, stress, and venture performance in digital platform-based ecosystems. *Journal of Business Research, 125*, 520–532. https://doi.org/10.1016/j.jbusres.2019.06.037

Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy, 48*(8), Article 103773. https://doi.org/10.1016/j.respol.2019.03.018

Nanda, A. P., & Banerjee, R. (2021). Consumer's subjective financial well-being: A systematic review and research agenda. *International Journal of Consumer Studies, 45*(4), 750–776.

Ojala, A., Evers, N., & Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. *Journal of World Business, 53*(5), 725–739. https://doi.org/10.1016/j.jwb.2018.05.001

Park, H., Kim, S., Jeong, Y., & Minshall, T. (2021). Customer entrepreneurship on digital platforms: Challenges and solutions for platform business models. *Creativity and Innovation Management, 30*(1), 96–115. https://doi.org/10.1111/caim.12404

Parris, D. L., & Peachey, J. W. (2013). A systematic literature review of servant leadership theory in organizational contexts. *Journal of Business Ethics, 113*(3), 377–393. https://doi.org/10.1007/s10551-012-1322-6

Paul, J. (2019). Marketing in emerging markets: A review, theoretical synthesis, and extension. *International Journal of Emerging Markets*. https://doi.org/10.1108/IJOEM-04-2017-0130

Paul, J., & Mas, E. (2020). Toward a 7-P framework for international marketing. *Journal of Strategic Marketing, 28*(8), 681–701.

Paul, J., & Barari, M. (2022). Meta-analysis and traditional systematic literature reviews—What, why, when, where, and how? *Psychology & Marketing*. https://doi.org/10.1002/mar.21657

Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review, 29*(4), Article 101717. https://doi.org/10.1016/j.ibusrev.2020.101717

Paul, J., & Rosado-Serrano, A. (2019). Gradual internationalization vs born-global / international new venture models: A review and research agenda. *International Marketing Review, 36*(6), 830–858. https://doi.org/10.1108/IMR-10-2018-0280

Paul, J., Parthasarathy, S., & Gupta, P. (2017). Exporting challenges of SMEs: A review and future research agenda. *Journal of World Business, 52*(3), 327–342. https://doi.org/10.1016/j.jwb.2017.01.003

Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021a). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies, 45*(4), O1–O16.

Paul, J., Merchant, A., Dwivedi, Y. K., & Rose, G. (2021b). Writing an impactful review article: What do we know and what do we need to know? *Journal of Business Research, 133*, 337–340.

Purohit, S., Arora, R., & Paul, J. (2022). The bright side of online consumer behavior: Continuance intention for mobile payments. *Journal of Consumer Behaviour.*. https://doi.org/10.1002/cb.2017

Pittaway, L., Robertson, M., Munir, K., Denyer, D., & Neely, A. (2004). Networking and innovation: A systematic review of the evidence. *International Journal of Management Reviews, 5/6(3&4)*, 137–168. https://doi.org/10.1111/j.1460-8545.2004.00101.x

Prashantham, S., Kumar, K., Bhagavatula, S., & Sarasvathy, S. D. (2019). Effectuation, network-building and internationalisation speed. *International Small Business Journal, 37*(1), 3–21. https://doi.org/10.1177%2F0266242618796145.

Rayburn, S. W., McGeorge, A., Anderson, S., & Sierra, J. J. (2021). Crisis-induced behavior: From fear and frugality to the familiar. *International Journal of Consumer Studies*. https://doi.org/10.1111/ijcs.12698

Reuschke, D., & Mason, C. (2020). The engagement of home-based businesses in the digital economy. *Futures, 102542*. https://doi.org/10.1016/j.futures.2020.102542

Reuschke, D., Mason, C., & Syrett, S. (2021). Digital futures of small businesses and entrepreneurial opportunity. *Futures, 135*, Article 102877. https://doi.org/10.1016/j.futures.2021.102877

Rey-Martí, A., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2016). A bibliometric analysis of social entrepreneurship. *Journal of Business Research, 69*(5), 1651–1655. https://doi.org/10.1016/j.jbusres.2015.10.033

Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management Research News, 27*, 31–39. https://doi.org/10. 1108/01409170410784185.

Sahut, J. M., Iandoli, L., & Teulon, F. (2021). The age of digital entrepreneurship. *Small Business Economics, 56*(3), 1159–1169. https://doi.org/10.1007/s11187-019-00260-8

Satalkina, L., & Steiner, G. (2020). Digital entrepreneurship and its role in innovation systems: A systematic literature review as a basis for future research avenues for sustainable transitions. *Sustainability, 12*(7), 2764. https://doi.org/10.3390/su12072764

Schiavone, F., Tutore, I., & Cucari, N. (2020). How digital user innovators become entrepreneurs: A sociomaterial analysis. *Technology Analysis & Strategic Management, 32*(6), 683–696. https://doi.org/10.1080/09537325.2019.1696955

Schückes, M., & Gutmann, T. (2021). Why do startups pursue initial coin offerings (ICOs)? The role of economic drivers and social identity on funding choice. *Small Business Economics, 57*(2), 1027–1052. https://doi.org/10.1007/s11187-020-00337-9

Secundo, G., Rippa, P., & Cerchione, R. (2020). Digital Academic Entrepreneurship: A structured literature review and avenue for a research agenda. *Technological Forecasting and Social Change, 157*, Article 120118. https://doi.org/10.1016/j.techfore.2020.120118

Shaheer, N. A., & Li, S. (2020). The CAGE around cyberspace? How digital innovations internationalize in a virtual world. *Journal of Business Venturing, 35*(1), Article 105892. https://doi.org/10.1016/j.jbusvent.2018.08.002

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Soluk, J., Kammerlander, N., & Darwin, S. (2021). Digital entrepreneurship in developing countries: The role of institutional voids. *Technological Forecasting and Social Change, 170*, Article 120876. https://doi.org/10.1016/j.techfore.2021.120876

Song, A. K. (2019). The Digital Entrepreneurial Ecosystem—a critique and reconfiguration. *Small Business Economics, 53*(3), 569–590. https://doi.org/10.1007/s11187-019-00232-y

Södergren, J. (2021). Brand authenticity: 25 Years of research. *International Journal of Consumer Studies, 45*(4), 645–663.

Srivastava, E., Bharadhwaj, S., Maheswarappa, S., & Paul, J. (2022). Nostalgia: A Review, Propositions, and Future Research Agenda. *Journal of Advertising*. https://doi.org/10.1080/00913367.2022.2101036

Steininger, D. M. (2019). Linking information systems and entrepreneurship: A review and agenda for IT-associated and digital entrepreneurship research. *Information Systems Journal, 29*(2), 363–407. https://doi.org/10.1111/isj.12206

Stevenson, H. H. (1983). *A Perspective on Entrepreneurship* (Vol. 13). Cambridge, MA: Harvard Business School.

Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics, 49*(1), 55–73. https://doi.org/10.1007/s11187-017-9867-5

Taylor-Wesselink, K., & Teulon, F. (2022). The interaction and influence of digital and non-digital structures, cultures and social norms on entrepreneurship. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 39*(3), 244–258. https://doi.org/10.1002/cjas.1639

Thomas, A., & Gupta, V. (2022). Tacit knowledge in organizations: Bibliometrics and a framework-based systematic review of antecedents, outcomes, theories, methods and future directions. *Journal of Knowledge Management, 26*(4), 1014–1041. https://doi.org/10.1108/JKM-01-2021-0026

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management, 14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Vadana, I. I., Torkkeli, L., Kuivalainen, O., & Saarenketo, S. (2019). Digitalization of companies in international entrepreneurship and marketing. *International Marketing Review*. https://doi.org/10.1108/IMR-04-2018-0129

Vassilakopoulou, P., & Grisot, M. (2020). Effectual tactics in digital intrapreneurship: A process model. *Journal of Strategic Information Systems, 29*(3), Article 101617. https://doi.org/10.1016/j.jsis.2020.101617

Vieira, E., & Gomes, J. (2009). A comparison of Scopus and Web of Science for a typical university. *Scientometrics, 81*(2), 587–600. https://doi.org/10.1007/s11192-009-2178-0

Wilk, V., Cripps, H., Capatina, A., Micu, A., & Micu, A. E. (2021). The state of #digitalentrepreneurship: A big data Leximancer analysis of social media activity. *International Entrepreneurship and Management Journal, 1–18*. https://doi.org/10.1007/s11365-020-00729-z

Williams, R. I., Jr, Clark, L. A., Clark, W. R., & Raffo, D. M. (2021). Re-examining systematic literature review in management research: Additional benefits and execution protocols. *European Management Journal, 39*(4), 521–533. https://doi.org/10.1016/j.emj.2020.09.007

Yang, Z., Cai, J., & Sliuzas, R. (2010). Agro-tourism enterprises as a form of multi-functional urban agriculture for peri-urban development in China. *Habitat International, 34*(4), 374–385. https://doi.org/10.1016/j.habitatint.2009.11.002

Zaheer, H., Breyer, Y., & Dumay, J. (2019). Digital entrepreneurship: An interdisciplinary structured literature review and research agenda. *Technological*

*Forecasting and Social Change, 148*, Article 119735. https://doi.org/10.1016/j.techfore.2019.119735

Zupic, I. (2014). *The knowledge base of technology entrepreneurship*. In Handbook of Research on Techno-Entrepreneurship, Second Edition: Edward Elgar Publishing.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods, 18*(3), 429–472. https://doi.org/10.1177/1094428114562629