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Digital Entrepreneurship: Theoretical Foundations, Methods, and Trends

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Foundations and Trends® in Entrepreneurship

Published, sold and distributed by:

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PO Box 1024
Hanover, MA 02339
United States
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www.nowpublishers.com
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Outside North America:

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PO Box 179
2600 AD Delft
The Netherlands
Tel. +31-6-51115274

The preferred citation for this publication is

A. J. C. Fernandes *et al.*. *Digital Entrepreneurship: Theoretical Foundations, Methods, and Trends*. Foundations and Trends® in Entrepreneurship, vol. 20, no. 6, pp. 574–678, 2024.

ISBN: 978-1-63828-457-4

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Volume 20, Issue 6, 2024
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Foundations and Trends® in Entrepreneurship, 2024, Volume 20, 4 issues. ISSN paper version 1551-3114. ISSN online version 1551-3122. Also available as a combined paper and online subscription.

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Digital Entrepreneurship: Theoretical Foundations, Methods, and Trends

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ABSTRACT

This study seeks to provide a comprehensive and integrative review of the literature on digital entrepreneurship. Based on a systematic approach, this review portrays literature trends, integrates prevailing literature approaches, and suggests an agenda for future research on digital entrepreneurship. The strict research protocol employed led to the identification of 186 articles on digital entrepreneurship. The descriptive analysis depicts the main trends of the literature on digital entrepreneurship. The critical review, based

Ana J. C. Fernandes, João J. Ferreira, Cristina I. Fernandes and Sascha Kraus (2024), "Digital Entrepreneurship: Theoretical Foundations, Methods, and Trends", Foundations and Trends® in Entrepreneurship: Vol. 20, No. 6, pp 574–678. DOI: 10.1561/0300000122.

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on a subsample of 59 highly influential articles that allows for deriving meaningful insights, groups the articles based on their methodologies (theoretical studies, empirical qualitative studies, empirical quantitative studies, and empirical mixed methods studies) and systematizes the prevailing approaches of the literature on digital entrepreneurship. For each group of articles, a conceptual framework that provides a fine-grained understanding of each of the prevailing approaches that constitute high-influential research on digital entrepreneurship is devised. The insights stemming from the comprehensive in-depth analysis were integrated and an integrative framework that bridges the prevailing approaches identified, thus aiding in structuring the knowledge on digital entrepreneurship, is devised. Finally, based on the comprehensive and integrative review undertaken, promising paths to further knowledge on digital entrepreneurship, and implications for theory, policy, and managerial practice are stated.

Keywords: Digital entrepreneurship; digital entrepreneur; digital startup; digital business model; digital transformation; systematic literature review; comprehensive review.

1

Introduction

Entrepreneurship has long been recognized as an engine of change. Since the seminal work of Schumpeter (1942), who portrayed the entrepreneur as an innovator who incessantly revolutionizes economic regimes through a continuous process of creative destruction, much discussion on the contributions of entrepreneurship towards innovation, competitiveness, and economic development has been maintained (Block *et al.*, 2017; Landström, 2006; Urbano *et al.*, 2019; Van Praag, 1999). As a consequence, entrepreneurship is a fragmented field of research that is continuously expanding (Audretsch *et al.*, 2015; Ferreira *et al.*, 2019; Kuratko *et al.*, 2015; Moroz and Hindle, 2012). Digital transformation, fueled by pervasive digital technologies, the emergence of the sharing economy, and the rapid rise of Artificial Intelligence and Industry 4.0, is transforming global economies and impacting all aspects of socioeconomic regimes (Acs, 2023; Dąbrowska *et al.*, 2022; Richter *et al.*, 2017; Verhoef *et al.*, 2021; Vial, 2019). Digital entrepreneurship emerges as a result of the ubiquitous manifestation of digital technologies in entrepreneurship (Nambisan, 2017). Digital entrepreneurship configures an exciting topic that sparks multiple debates in the literature, motivates ongoing policy

discussions, and changes contemporary practices (Acs *et al.*, 2021; Paul *et al.*, 2023; Sahut *et al.*, 2021; Zaheer *et al.*, 2019).

Digital technologies are transforming entrepreneurial practices across all its levels (Audretsch *et al.*, 2022, 2023; Autio *et al.*, 2024; Bogers *et al.*, 2017; Li *et al.*, 2024; Nambisan, 2017). Entrepreneurs can harvest the potential of digital environments, notably digital platforms and ecosystems, and multisided marketplaces, to overcome constraints and engage in the entrepreneurial process (Chen *et al.*, 2021; Cimino *et al.*, 2024; Cutolo and Grimaldi, 2023; da Fonseca *et al.*, 2023; Delacroix *et al.*, 2019; Zhao *et al.*, 2023). Digital economy enables new ways of resource mobilization while facilitating capital access (notably, through crowdfunding platforms) to entrepreneurial firms (Block *et al.*, 2018, 2021; Butticcè and Vismara, 2022; Inceoglu *et al.*, 2024). Digital entrepreneurial ventures, embedded in digital platforms and ecosystems, are reshaping global value chains (Ferreira *et al.*, 2024a; Kraus *et al.*, 2019b). Traditional (non-digital) firms worldwide are transforming their business models to capitalize on the opportunities prompted by digital transformation while engaging in (digital) business model innovation (Bharadwaj *et al.*, 2013; Bouncken *et al.*, 2021; Clauss *et al.*, 2020; Jorzik *et al.*, 2024b; Merín-Rodrigáñez *et al.*, 2024; Tallman *et al.*, 2018). Industries worldwide are adapting to the impacts brought by the rapid emergence of digital platforms and ecosystems (Abed Alghani *et al.*, 2024; De Reuver *et al.*, 2018; Hanna *et al.*, 2011; Leipziger *et al.*, 2024; Li *et al.*, 2022; Rohn *et al.*, 2021). Global value chains are being disrupted by the pervasiveness of digital technologies that enable new (global) ways of internationalization and disintermediation (Chalmers *et al.*, 2021b; Coviello *et al.*, 2017; Nambisan *et al.*, 2019b). Whereas, the digital transformation of global society, fueled by (digital) entrepreneurial endeavors, also fosters sustainability transitions (Billio *et al.*, 2024; Cumming *et al.*, 2024; Fernandes *et al.*, 2022b; Ferreira *et al.*, 2024b; He *et al.*, 2024; Jorzik *et al.*, 2024a).

The digital entrepreneurship field is still developing, and the literature has yet to grasp critical gaps of the digital entrepreneurship approach fully (Kraus *et al.*, 2019a; Nambisan, 2017; Paul *et al.*, 2023; Sahut *et al.*, 2021; Yáñez-Valdés and Guerrero, 2024; Zaheer *et al.*, 2019). Notably, the digital entrepreneurship literature still partially

lacks theoretical underpinnings (Nambisan, 2017; Zaheer *et al.*, 2019), fine-grained methodological insights (Kraus *et al.*, 2019a; Nambisan, 2017), and integrative frameworks (Sahut *et al.*, 2021; Zaheer *et al.*, 2019) that structure knowledge and further understandings on this promising field of research. Accordingly, to address the critical research gaps identified, this work is set to provide a comprehensive and integrative review of the literature on digital entrepreneurship based on a systematic approach – suitable to portraying literature trends, integrating prevailing literature approaches, and suggesting an agenda for future research – that structures knowledge and further understandings of the digital entrepreneurship approach.

Literature reviews take stock of existing knowledge to produce new knowledge that advances theory, policy, and practice (Breslin *et al.*, 2020; Kraus *et al.*, 2024, 2023a; Snyder, 2019; Tranfield *et al.*, 2003). As portrayed in Table 1.1, which presents the key features of the extant literature reviews on digital entrepreneurship and its related themes developed over the years, this review takes a broader, more nuanced and more up-to-date approach than the existing reviews. Notably, this review comprehends the full scope of digital entrepreneurship research and not only specific facets (such as in relation to entrepreneurial ecosystems, academic entrepreneurship, or technology entrepreneurship) or time periods; it is also based on a comprehensive and thorough curation process that led to identifying and systematizing a high-quality sample of the digital entrepreneurship literature. Accordingly, the main contribution of this study lies in providing a comprehensive and integrative review of the state-of-the-art literature on digital entrepreneurship.

The conceptual frameworks devised in this review provide a fine-grained understanding of each of the prevailing approaches (theoretical studies, empirical qualitative studies, empirical quantitative studies, and empirical mixed methods studies) on digital entrepreneurship literature; whereas the integrative framework on digital entrepreneurship bridges the prevailing approaches identified, thus aiding in structuring the knowledge on digital entrepreneurship. Moreover, following the comprehensive and integrative review undertaken, promising paths to further knowledge on digital entrepreneurship, and implications for theory, policy, and managerial practice are stated. Thus, this review

provides important and much needed contributions for literature, policy, and practice.

Accordingly, this review is set to address the following research questions (RQs):

- RQ1: What are the literature trends on digital entrepreneurship?
- RQ2: What are the prevailing literature approaches on digital entrepreneurship?
- RQ3: Where should the literature on digital entrepreneurship move?

This systematic literature review (SLR) follows best practices (Calabrò *et al.*, 2019; Kraus *et al.*, 2022) and a strict protocol (Tranfield *et al.*, 2003) for reviewing the literature on digital entrepreneurship. It is set to address three key objectives. First, to portray the main trends of the literature on digital entrepreneurship. In this sense, a descriptive analysis that describes the annual evolution of publications and citations of the article base, the key features of the sample journals, the most impactful articles, the main authors of the article base, and the geographical distribution of scientific production is presented. Therefore, attending the first RQ. Second, to integrate the prevailing approaches of the literature on digital entrepreneurship. Accordingly, the critical review undertaken systematizes the prevailing approaches of the literature on digital entrepreneurship based on a subsample of highly influential articles that allows for deriving meaningful insights that provide a significant contribution to theory development (Kraus *et al.*, 2020, 2022, 2024).

Specifically, the articles were grouped based on their methodologies (theoretical studies, empirical qualitative studies, empirical quantitative studies, and empirical mixed methods studies), systematized according to their key features, and a conceptual framework that integrates the prevailing approaches for each group was developed. Furthermore, the insights stemming from the comprehensive in-depth analysis undertaken were consolidated and an integrative framework that integrates the prevailing approaches on digital entrepreneurship was devised. Thus,

addressing the second RQ. Third, the comprehensive in-depth review provided insights to suggest a future research agenda on digital entrepreneurship. Hence, addressing the third RQ.

This review delivers important contributions to theory, policy, and managerial practice. To theory, it provides a comprehensive and integrative review of the state-of-the-art literature on digital entrepreneurship. The complementary in-depth analyses identify research trends, synthesize existing knowledge, portray literature gaps, integrate prevailing approaches, and generate methodological, theoretical, and conceptual insights. The conceptual frameworks designed provide a fine-grained understanding on each of the prevailing approaches that constitute high-influential research on digital entrepreneurship while the integrative framework on digital entrepreneurship integrates the prevailing approaches identified thus aiding in structuring the knowledge on this field. The insights stemming from the complementary in-depth analyses were leveraged to devise a comprehensive agenda for future research that suggests promising paths for advancing the literature on digital entrepreneurship. Furthermore, this review states comprehensive implications that assist evidence-based decision-making and support theory, policy, and managerial practice.

This study is organized as follows. Section 2 presents definitions of digital entrepreneurship. Section 3 details the methodology applied in this review. Section 4 describes the literature trends on digital entrepreneurship. Section 5 integrates the prevailing approaches of the literature on digital entrepreneurship. Section 6 devises an integrative framework and an agenda for future research on digital entrepreneurship. Lastly, Section 7 states concluding remarks and implications for theory, policy, and managerial practice.

Table 1.1: Extant reviews on digital entrepreneurship

Article	Method	Focus	Databases	Keywords	Publication Span	Sample	Main Contribution
Kraus <i>et al.</i> (2019a)	Systematic literature review	State-of-the-art literature on digital entrepreneurship	EBSCO (Business Source Premier, Econlit, Entrepreneurial Studies Source)	"digital entre*", "digital startup" as well as "digital innovation" AND "entre*"	2007–2018	35 articles	Key topics and methods on the digital entrepreneurship literature; research map of digital entrepreneurship
Zaheer <i>et al.</i> (2019)	Systematic literature review	Critical review of the digital entrepreneurship literature	Google Scholar, Business Source Premier, ProQuest, and JSTOR	"digital", "internet", "net", "e-", "cyber", or "online" coupled with "entrepreneurial", "start-up", or "start-up" <i>Other keywords included:</i> "capital", "financing", "capabilities", "team", "ecosystem", "network", "strategy", "growth", "education", "women", and "minority"	2000–2019	133 articles	Insight, critique, and transformative redefinition of the digital entrepreneurship literature
Sahut <i>et al.</i> (2021)	Literature review and Editorial (Introduction to the Special Issue)	Major research streams in digital entrepreneurship	Scopus	"Digital entrepreneurship"	2015–2018	47 articles	Digital information management framework to analyze digital entrepreneurship; Definition and key themes on digital entrepreneurship; introduction to the special issue

Continued.

Table 1.1: Continued

Kollmann <i>et al.</i> (2022)	Scoping literature review	Eras of digital entrepreneurship	EBSCO and Scopus	"e-entrepreneur*" OR "electronic entrepreneur*"; "digital entrepreneur*"; "virtual entrepreneur*"; "online entrepreneur*"; "cyber entrepreneur*" OR "cyberentrepreneur*" OR "cyberpreneur*"; "internet entrepreneur*" OR "net entrepreneur*"; "it entrepreneur*"; "e-commerce entrepreneur*"; "techno-entrepreneur*" OR "technopreneur*" "artificial intelligence" AND "entrepreneur*" "blockchain" AND "entrepreneur*" AND "big data analytics" AND "entrepreneur*"	1990–2020	1354 articles	Historical development of the digital entrepreneurship literature (eras of digital entrepreneurship); cross mentions, definitions, and the future of digital entrepreneurship
Paul <i>et al.</i> (2023)	Systematic literature review	Themes, contexts, and methodologies of the digital entrepreneurship literature	Web of Science, SAGE Journals, ScienceDirect, EBSCOhost, and Scopus	("digital entrepreneurship") AND ("digital technolog*" OR "digital entrepreneurship ecosystem*" OR "digital platform*")	2017–2021	40 articles	Framework-based review (TCM framework) of the digital entrepreneurship literature; conceptual model of digital entrepreneurship; digital entrepreneurship orientation cycle
Berman <i>et al.</i> (2023)	Systematic literature review	Drivers of successful digital entrepreneurship	Web of Science and Scopus	"digital entrepreneur*" OR "digital start*" OR "digital venture*" OR "digital entrepreneur*" AND ("digital technolog*" OR "digital platform*")	2018–2022	29 empirical articles	Mapping literature trends; themes, and knowledge map on the drivers and success factors of digital entrepreneurship

Continued.

Table 1.1: Continued

Yáñez-Valdés and Guerrero (2024)	Systematic literature review	Definitions, trends, determinants, and impacts of digital entrepreneurship pre- and post-COVID-19 pandemic	Web of Science and Scopus	"digital entrepreneurship"; "digital start-up"; "digital venture"	2010–2021	208 articles	Multidimensional framework of digital entrepreneurship pre- and post-COVID-19 pandemic (evolution of trends and definitions, and determinants and impacts)
Anim-Yeboah <i>et al.</i> (2020)	Systematic literature review	Digital entrepreneurship in business enterprises	Science Direct/ Elsevier, Emerald, AIS Library, Sage, Springer, and Taylor and Francis	"digital innovation" and "digital entrepreneurship" <i>Other keywords included:</i> "digital enterprise," "digital economies," "digital technologies," and "innovative technologies."	2013–2018	101 articles	Mapping trends and themes in the digital entrepreneurship literature
Satalkina and Steiner (2020)	Systematic literature review	Digital entrepreneurship and its role within the transformation of the innovation system	Harvard Hollis and Web of Science	"digital entrepreneurship" and "digital business"	2014–2018	52 articles	Key categories, determinants, and dimensions of digital entrepreneurship

Continued.

Table 1.1: Continued

Berger <i>et al.</i> (2021)	Systematic literature review (with bibliometric analysis – co-word analysis) and Editorial (Introduction to the Special Issue)	Digital entrepreneurship and digital innovation	Web of Science	“digital inno*” and “digital entrep*”	2010–2019	159 articles (41 articles on digital entrepreneurship and 118 articles on digital innovation)	Mapping trends and evolution of the digital entrepreneurship and digital innovation research; introduction to the special issue
Kuester <i>et al.</i> (2018)	Systematic literature review	Go-to-market strategies for e-innovations of start-ups	EBSCO and JSTOR	<i>Related to:</i> innovation, new product, new service, launch, and price, brand, adoption, staff	1989–2015	131 articles	Review and conceptual model of the relationship between E-Innovation, Go-to-Market Strategy Elements, and E-Innovation Adoption
Calandra <i>et al.</i> (2024)	Qualitative methodology based on a hybrid thematic and content analysis performed using ATLAS.ti and Leximancer softwares)	Metaverse as an enabler of digital entrepreneurship	Nexis Uni database	“metaverse”	Two years data	553 articles	Macro-topics and concepts for metaverse and digital entrepreneurship; theoretical tools, and advanced techniques that digital entrepreneurs can apply to the metaverse

Continued.

Table 1.1: Continued

Fernandes <i>et al.</i> (2022a)	Systematic literature review (with content and bibliometric analysis – bibliographic coupling, keyword, and co-word analysis)	Digital entrepreneurship platforms	Web of Science	“digital* entrepreneur*”	2015–2021	83 articles	Mapping literature trends; thematic synthesis and digital entrepreneurship framework
Bejjani <i>et al.</i> (2023)	Systematic literature review (with bibliometric analysis – co-occurrence of terms)	Digital entrepreneurial ecosystems	Web of Science and Scopus	“digital* AND entrepreneur*” and “entrepreneur* AND ecosystem”	2010–2021	46 articles	Comprehensive understanding of digital entrepreneurial ecosystems; conceptual framework, typologies, and definition of digital entrepreneurial ecosystems
Alhajri and Aloud (2024)	Systematic literature review	Female digital entrepreneurship	Web of Science and Scopus	“female digital entrepreneurship” OR “woman digital entrepreneurship.”	2017–2022	18 articles	State-of-the-art review of the female digital entrepreneurship literature

Continued.

Table 1.1: Continued

Steinger (2019)	Systematic literature review	Connection of information technology and entrepreneurship	18 journals (related to information systems, entrepreneurship, and general/strategic management disciplines)	<i>Related to entrepreneurship:</i> (entrepren*, startup, start-up, "new venture," "new firm," "young firm," founder, founding, founded, "venture capital," "Initial Public Offering," and IPO) <i>Related to information systems:</i> ("information technology," "information technologies," "information system," internet, web, net, online, digital, digitized, digitalized, electronic, virtual, computer, software, hardware, mobile, and app)	1990–2017	292 articles	State-of-the-art, roles, and definitions on information technology associated entrepreneurship
Majdouline <i>et al.</i> (2022)	Systematic literature review (with bibliometric analysis – citation and network analysis)	Technological entrepreneurship	Web of Science	"technological entrepreneurship", "technological venture", "technical entrepreneurship", "techno entrepreneurship", entrepreneurship, and "technological startup"	1985–2019	222 articles	Mapping and chronological evolution of the technological entrepreneurship literature

Continued.

Table 1.1: Continued

Secundo <i>et al.</i> (2021)	Systematic literature review (with content and bibliometric analysis – bibliographic coupling of documents analysis and co-occurrence of keywords analysis)	Role of social media for entrepreneurship processes and activities	Scopus	“entrepreneurship” and “social media”	2009–2020	69 articles	Mapping the state-of-the-art of the role of social media for entrepreneurship
Secundo <i>et al.</i> (2020)	Systematic literature review (with content and bibliometric analysis – bibliographic coupling analysis, co-citation analysis, and co-occurrence of keywords)	Digital Academic entrepreneurship	Scopus	“academic entrepreneurship” OR “entrepreneurial universit*” in combination with “digital technolog*” OR “digital transformation” OR “digitalization”	2005–2018	59 articles	Mapping the state-of-the-art of digitalization in academic entrepreneurship
Stairidis and Kitsios (2024)	Semi-structured literature review	Digital entrepreneurship education	Scopus, Science Direct, and Web of Science	“digital business”, “digital entre*”, “digital startup”, “digital innovation”, “internet entre*”, “online entre*”, “cyber entre*”, “e-entre*”, “net entre*”, in combination with the term “educ*”	2001–2022	89 articles	Literature trends and conceptual framework of digital entrepreneurship education

Continued.

Table 1.1: Continued

Fernandes <i>et al.</i> (2024) [this review]	Systematic literature review	Comprehensive and integrative review on digital entrepre- neurship	Web of Science and Scopus	("digit* entrepreneur*" OR "digit* start*" OR (("digit* compan*" OR OR "digit* firm*" OR OR "digit* enterpris*" OR "digit* business*" OR OR "digit* ventur*" AND entrepreneur*"))	2001–2024	186 articles	Comprehensive and integrative review of the state-of-the-art literature on digital entrepreneurship; conceptual frameworks providing a fine-grained understanding of each of the prevailing approaches (theoretical studies, empirical studies, empirical qualitative studies, empirical quantitative studies, and empirical mixed methods studies) on digital entrepreneurship; integrative framework on digital entrepreneurship
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