A SYSTEMATIC REVIEW OF DIGITALIZATION AND ENTREPRENEURIAL PERFORMANCE

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Abstract

Prior research on digitalization and entrepreneurial performance has employed diverse contexts and theoretical frameworks to examine how social media and related tools contribute to the adoption of digitalization. However, there remains a need for a comprehensive systematic review to identify common areas of focus, methodologies, variables, and future research directions. Using the Population, Intervention, Comparison, Outcomes, and Context (PICOC) framework, this systematic literature review synthesizes findings from 24 studies published between 2017 and 2022 across nine databases. The review shows that digitalization has been widely adopted for marketing, consumer networking, customer engagement, opportunity recognition, digital literacy, and overall business growth in different contexts. Most studies relied on quantitative and qualitative approaches, while only a few used mixed-method or action research designs, highlighting a methodological gap. Moreover, the effects of digitalization on the startups and performance outcomes of undergraduate entrepreneurs remain underexplored, particularly in developing countries. The findings suggest that young entrepreneurs are increasingly adopting digitalization, yet their challenges and performance outcomes require deeper investigation. This review contributes a synthesized understanding and offers actionable directions to support undergraduate entrepreneurs' digital journeys.

INTRODUCTION

Digitalization has transformed entrepreneurial practices, particularly for undergraduate entrepreneurs. Scholars indicated that digital capabilities; such as Cahyono et al. (2024) and Akos et al. (2023) highlighted the significance of digital literacy play a noteworthy role in enhancing entrepreneurial outcomes, including revenue generation, employment creation, and opportunity recognition. At the same time, the rapid digital shift in higher education, accelerated after the COVID-19 pandemic integrated digital tools into entrepreneurship education and reshaped the learning environment for student entrepreneurs (Kim & Jin, 2024; Shah & Rashid, 2023). Digitalization is a new digital technological trend that has grasped the entrepreneurs in business, and is reshaping all sectors of society (Lang, 2021; Guo et al., 2020). Moreover, digitalization helps to improve entrepreneurial performance (Gupta, 2020). Digitalization has enabled entrepreneurs to respond effectively to the public crisis by

making use of their dynamic capabilities (Guo et al., 2020). Digitalization has a significant impact on society and is a key economic driver of productivity, GDP growth, and job creation (Dwivedi et al., 2019). Furthermore, it has been noted that industry representatives understand the challenges and opportunities that come with digitalization for online business applications and exploitation (Ringensonet et al., 2018). In Romania, Latvia, Western and Eastern European countries, 'the economic characteristics of the digitization process in each country allow identifying main priorities to enhance online entrepreneurship processes in the future' (Rivza et al., 2019). Digitalization has effectively improved business performance and built relationships with salespeople (Zhao et al., 2022).

According to a business perspective, digitalization is defined as 'Digital transformation is just development in business, made possible by communication technology' (Gupta, 2020). 'Digitalization is the growing application of ICT across the economy' (Morley et al., 2018). The International Energy Agency (2017) has described digitalization as 'encompassing a range of digital technologies, concepts, and trends such as Artificial Intelligence (AI), the Internet of Things (IoT), and social media'. Concerning student entrepreneurs, social media plays a role in driving student entrepreneurial growth (Chaniago & Sayuti, 2022). In Indonesia, students who are proficient in communication technology, sociology, and entrepreneurship knowledge had a major influence on entrepreneurial intents; however, students will be more adaptable to diverse technology, and it will provide them with an opportunity to become entrepreneurs (Chaniago & Sayuti, 2019). Scholars described social media as 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content' (Kaplan, 2018; Kaplan & Haenlein, 2010). However, social media can be categorized into numerous varieties, such as Twitter, Pinterest, MySpace, LinkedIn, YouTube, Instagram, Flicker, Wikipedia, Google+, Yahoo, Hotmail, Gmail, and

Facebook, for social, professional communication, and consumer services (Albarran, 2013). Facebook marketing was having an impact on the entrepreneur's firm as well as their network of contacts (Dahlan, 2021). The video-based Facebook focused on MARA Negeri Perak entrepreneurs in Malaysia, which were relevant to them (Dahlan, 2022). Additionally, entrepreneurs had a high level of gratification and trust with video-based Facebook advertisements (Dahlan, 2022). In addition to this, Business-to-business (B2B) and Business-to-Consumer (B2C) organizations have begun to use social media as part of their digital transformation, which is used by 83 percent of business to business enterprises, making it the most popular marketing tool (Pulizzi & Handley, 2017).

Numerous studies examine overarching categories of digitalization, still neglect to identify which individual tools (e.g., artificial intelligence, digital technologies, intelligence of things (IOT), cloud computing, or social media) most profoundly influence the performance of student entrepreneurs (Wang et al., 2024; Wang et al., 2023). On the other side, digitalization improves the performance of businesses. The research gap has been found in understanding the influence of digitalization faced by student entrepreneurs (Kreiterling, 2023). There is limited research on how digital literacy and training in academic, nonacademic, and professional settings transform into real-world entrepreneurial success. In addition to this, Omar et al. (2020) emphasized that digital literacy is a critical barrier for undergraduate entrepreneurs and suggested that more research is needed on how educational institutions and entrepreneurial programs can support students in developing digital skills. Moreover, Kraus et al. (2019) note that although digitalization plays a pivotal role in entrepreneurship, a lot of research is still required to explore how student entrepreneurs use and adopt digital technologies. Besides this, digital technology adoption is slow among Vietnamese entrepreneurs (Akbari & Hopkins, 2022). Despite a lack of experience and digital awareness, business owners are ineffectively

transforming their business by using digital technologies in Uganda (Kimuli et al., 2021). Moreover, digital technologies are still underutilized in Italian Contamination Labs (Secundo et al., 2020). However, a gap remains: while digital tools enhance access and capability, media literacy, the capacity to critically evaluate and engage with digital media, has received limited attention in entrepreneurship research. Emerging evidence suggests that media-literate students exhibit stronger entrepreneurial intentions and better decision-making in digital environments. Much of the research is conducted in developed economies, whereas studies in developing countries (including South Asia, Africa, and Latin America) remain scarce. This geographical gap is critical because undergraduates in resource-constrained environments may face digital divides, infrastructure limitations, and skill disparities that shape their entrepreneurial outcomes differently. Therefore, the study demonstrates the research gap, to analyze the research contexts, and the theoretical frame applied in the research articles. The gaps that were derived from this review have proven that only limited studies have been conducted in the third world countries.

METHOD

In this study, researcher carried out a systematic literature review to explore the connection between social media use and undergraduate entrepreneurs. A systematic literature review is a carefully planned and methodical process for examining existing empirical studies using transparent and replicable steps to locate, collect, select, evaluate, analyze, interpret, and report findings (Fisch & Block, 2018). Such reviews are thorough and detailed, outlining the methods and approaches applied in the research (Cronin et al., 2008). By addressing specific research questions, they enable researchers to draw well-founded conclusions (Thome et al., 2016). This comprehensive systematic review of literature (SLR) protocols organized as follows: The first section to set Literature Search String, searching strategy for primary studies and selection of Inclusion and exclusion criteria, application of filtration and justification for selection of database published between 2017 to 2022 was chosen to capture the most recent literature reflecting in multiple databases discusses the growing research interest on adoption of social media as a determinant of undergrads entrepreneurs and highlights the fragment approach theoretical foundation used. Variables, methodology, geographical areas, and statistical analysis are associated with the use of social media among entrepreneurs. In second section, the data extraction and synthesis of findings were analyzed. In the final stage, the results of 24 studies were analyzed, discussed and concluded, along with the potential direction for further research.

DISCUSSION

This systematic literature review examines the research contexts used in the reviewed studies. And, it also, reviews the theoretical frameworks employed to the constructs used to measure adoption of social media, and the main findings to identify research gaps and propose areas for future inquiry. The population, intervention, comparison, outcomes and context (PICOC) framework is widely used in evidence-based research. According to Lockwood et al. (2015) for qualitative systematic reviews aiming to interpret the meaning of phenomena and their interconnections, a modified version of PICO is useful for framing clear and relevant research questions. The approach of population, interventions, comparison, outcomes, and context (PICOC), also referred to by authors (Kitchenham & Charters, 2007; Kitchenham & Brereton, 2013), provides a useful qualitative method to examine the research gap for future direction.

Table 1. Population, Interventions, Comparison, Outcomes, and Context (PICOC)

Population	Undergraduate(s)/ student entrepreneur(s)
Intervention	Digitalization and Entrepreneur
Comparison	N/A
Outcomes	Entrepreneurs
Context	Academics and Non-academics

Source: Authors' data Analysis

Section I: Literature Search String: The search string used included: 'Digitalization and Undergraduates or students or Entrepreneur and Small and Medium and Enterprise'. The term digitalization was included because of the observed uses of digital technologies and social media's adaption. During the analysis of the selected papers, the review included only those studies that specifically measured digitalization usage, while also considering whether they have addressed digital technology or social media within their broader research context. The alternative keys included 'Digitalization or digital technology or social media, artificial intelligence, intelligence of things, digital transformation or digital devices (smart, android phone), business intelligence'. 'Undergraduate(s) or student entrepreneurs'. 'Entrepreneurs or small and medium businesses, supply chain, business/micro and small enterprises'.

Searching Strategy for Primary Studies: Initially, the search string was run on the online library database of the University of Sains Malaysia (USM), Malaysia, as a pretest of the search string. The criteria of inclusion and exclusion of the study have not been applied. During running of search string on the browsing of all databases, found conference proceedings, books, magazines, annual reports, conference proceedings/reviews/booklets, early cited articles, conference papers, book chapters, reference works, secondary data analysis, case studies, catalogs, sessions, abstracts books, single abstract proceedings, exhibition pamphlets, interviews, annual conference reports, annual meeting reports. In contrast, the ProQuest has shown very limited results. However, Taylor & Fancies Online, Sage Journal, and Wiley Online Library have shown no results. Therefore, these databases have not been included in the sampled databases of the study. See Table 2 for details.

Table 2. Database Searching Strategy

Data-based Name	Number of studies in General
Scopus	33
Emerald	72
JSTORE	73
ProQuest	07
SpringerLink	6503
ACM Digital Library	586614
Taylor & Fancies Online	(0)
Sage journal	(0)
Wiley Online Library	(0)

Source: Authors' Data Analysis

The first searching string was run on the browsing of nine (09) databases in 2022. See Table 2 for details. When the researcher ran the search string

on the searched document of the Scopus database, a total of 33 document results were returned (See Table 2 for details). After this, researcher ran a

similar search string on the browsing of Emerald's, and found 72 results. The next database was JSTOR, running the same search string, and searched 73 results in the general search browsing .After this, a similar search string on the SpringerLINK databases found 6503 general studies. The same search string was applied to the database of ACM Digital Library, and found 586614 results in general. Researcher can report that with the help of screenshots of the documents, the Scopus database searched only the abstracts of the studies, and the same outcome was found with the Emerald, JSTOR, ProQuest, SpringerLINK, and ACM Digital Library databases of the study.

Selection of Criteria Inclusion and Exclusion: The criteria Inclusion and Exclusion were selected by applying the search strings on the database. The criteria of inclusion were set based on the following:

- The major domain must be 'Digitalization', and the study focuses on undergraduate students and entrepreneurs, and small and medium enterprises.
- Those research studies can be selected that are related to the major key search string and PICOC.
- The studies can be qualitative, quantitative, mixed, experimental, or case studies.
- The research studies have digital objective identifier (DOI) number, international standard series number (ISSN) or published in and any recognized research journals.
- The study subject should be affiliated with the 'Digitalization' studies.
- If the single study has appeared in two /three databases, then, in this case, it will be included only in one database.
- Only those studies are included that have covered at least two or three keywords.

The criteria of exclusion were set based on the following:

- Studies including, non-professional subjects or students' unpublished projects, documents, annual reports, conference proceedings /reviews /booklets, early cited articles, conference papers, book chapters, reference works, secondary data analysis, case studies, catalogs, brochures, sessions, abstract books, single abstract proceedings, education related data, exhibition pamphlets, interviews, annual conference reports, annual meeting reports, overviews and those studies which do not show title while scrutiny.
- One word that does not relate to the search string.
- Those contents, which have no DOI number or are published in recognized research journals. Proceedings, and Secondary or review studies.
- Those research studies cannot be selected that are irrelevant to the major Key search strings and PICOC.
- Studies appear as work-in-progress, posters, or short papers containing fewer than 6 pages.
- Studies written in languages other than English.
- Duplicated and irrelevant studies. In the beginning, the title, abstract, and keywords of each retrieved paper were chosen by reading, and any study that didn't fit the inclusion or exclusion criteria was eliminated.
- When the paper's title and abstract provided insufficient information to decide, the decision was based on the exclusion and inclusion criteria.
- Only those studies were excluded which have fewer than two keywords.
- At First, the title, abstract, and keywords of each retrieved research article were read, and any research that didn't fit the inclusion or exclusion criteria were eliminated.

The complete text of the paper, which is most relevant to the key search string, was reviewed when the title and abstract were insufficient to make a decision, and the choice was made using the inclusion/exclusion criteria.

Application of Filtration: The application of filtration on selected databases has been analyzed in detail. See Table 3 for details.

Table 3. Results after Filtration in 2022

Data-based Name	Filtration in the Selection of Articles
Scopus	25
Emerald	35
SpringerLink	614

Source: Author's Data

JSTOR: I found a different experience on JSTOR, when the first search string keys were run on JSTOR, I found 73 studies generally (See Table 2 and 3 for details). The filtration was applied to JSTORE and no studies. In spite of being a famous and authentic research publication data-based search engine, JSTOR has been excluded from the multidisciplinary course due to the inconvenience.

ACM Digital Library: As search keys run on the database of ACM Digital Library, a lot of results were found.. In this data-based search engine, multiple documents have been displayed, which are irrelevant to the search string of this study. See Table 2 and 3 for details.

ProQuest: After the application of filtration in the database of ProQuest, I found irrelevant studies. See Table 2 and 3 for details.

The justification for the selection of the database: The 'Scopus' database is most convenient for data collection of the relevant research articles. However, the Emerald database is convenient, and most of the open-access research journals are available on this platform. Almost all research studies related to the search string were easily downloaded. The SpringerLINK scrutinizes, 70 percent studies are discarded to fulfill the exclusion criteria of the study. SpringerLINK should not showed such irrelevant data. In some studies, the title consists of one word, which does not show any means, so these types of studies are also excluded. See Table 2 and 3 for details.

Section II: Data Extraction: In designing a data extraction form, the study's quality criteria and research questions were taken into account. Each study referred by the author's name, year of the study published. Other characteristics of our data extraction form were configured by instructions given by authors (Kitchenham, Charters, 2007). The process of data extraction was accompanied by reading the titles 'Data Extraction'. See Table 4 for details, and 'Data Checker' Appendix A.

The total number of studies that were retrieved, as shown in Table 6, was saved into various folders, each of which was titled after the database, and search engine from which the study was downloaded. Every study was listed along with its title, author(s), and year. For reference on the data extraction form soft copy of the data extraction form was made in Microsoft Excel.

Data synthesis: The primary studies were selected on the basis of the exclusion and inclusion criteria. The qualitative and quantitative research design was taken from these primary research (e.g., Digitalization or entrepreneurs associated with undergraduate students, Small-Medium Entrepreneurs).

FINDING

According to the study's exclusion and inclusion criteria for selection, a total of 24 primary studies were included. All search strings of this study, 'digitalization, digital technologies, social media, undergraduate, and entrepreneurs performance', are hardly observed in any of these studies. However, the connection between digitalization or digital technologies, social media, and entrepreneurs' performance have frequently discussed. See Table 4 for details.

Table 4. Data Extraction

Database Name	Data Extraction
Scopus	06
Emerald	06
SpringerLink	12
Total	24

Source: Author's Data

Research question 1: What is the research contexts used in the reviewed studies?
The reviewed studies highlighted a rising interest in exploring the effects of digitalization and the adoption of social media, particularly among entrepreneurs and small and medium enterprises. Key research areas included entrepreneurship, business performance, digital technology adoption, e-commerce, e-marketing, networking, small & medium entrepreneurs' performance, literacy and customer engagement. However, there remains a significant gap in empirical research explicitly targeting undergraduate entrepreneurs and social media adoption. See Table 4 for details.

Table 5. Fragmentation of Theoretical Frameworks

Theoretical Framework	Authors	Studies
Fixed effects regression model.	Zhao et al., (2022)	01
Technology acceptance model(TAM)	Chatterjee, et al., (2022) Kimuli et al., (2021) Lateef,Keikhosrokiani, (2022)	03
unified theory of acceptance and use of technology (UTAUT), Technological opportunism (TO).	Oppong et al., (2020) Lateef, Keikhosrokiani, (2022)	02
Lazear's entrepreneurship theory	Chatterjee et al., (2022)	1
supply chain management model	Akbari & Hopkins (2022)	1
D-BEST model, AIOTIDIHN Model, ETB model	Sassanelli, Terzi, (2022)	1
dynamic capabilities (DC) model, and business model change	Witschel et al., (2019)	1
E-commerce model	Song et al., (2022)	1
12 models	Total	11

Source: Author's Data

Table 6 Summary of reviewed studies from 2017- 2022

Author	Year	Source of Journal	Title of Study	Theoretical Framework	Types of Methods	Sample	Independent Variable	Dependent Variable
Zhao et al.,	2022	Emerald	Can the digital transformation of manufacturing enterprises promote enterprise innovation?	Individual time bivariate fixed-effects regression model to empirically	cross-sectional selection	China	Digital transformation	Enterprise innovation capability
Chatterjee et al.,	2021	Emerald	Digital transformation and entrepreneurship process in SMEs of India: a moderating role of adoption of AI-CRM capability and strategic planning	TAM	SMART PLS	Ahmedabad, Kolkata and Mumbai (cities in India)	Perceived usefulness, Perceived ease of use, Willingness to change	Corporate digital entrepreneurship
Kimuli et al.,	2021	Emerald	Digital technologies in micro and small enterprise: evidence from Uganda's informal sector during the COVID-19 pandemic	TAM	qualitative design using a multi-case-based approach	St. Balikuddembe Market, Kampala, Uganda	Impact of COVID-19, Awareness and uses of digital technologies	Intention to adopt digital technologies
Secundo et al.,	2020	Emerald	Digital transformation in entrepreneurship education centers:	Did not apply	Qualitative methods, multiple case study	CLab, Italy	digital technologies used	Effectiveness and adoption of digital technologies

Author	Year	Database	Title	Theory/Model	Method	Country	Factors	Outcome
			preliminary evidence from the Italian Contamination Labs network		design, web survey			
Oppong et al.,	2020	Emerald	Potential of digital technologies in academic entrepreneurship – a study	unified theory of acceptance and use of technology (UTAUT) and technological opportunism (TO)	qualitative approach comprising of semi-structured in-depth interviews	in AES firms, India	Business-to-customer relations, brand reputation, competition, cultural and language influences	Intention to use digital technologies
Jose,	2018	Emerald	Strategic use of digital promotion strategies among female emigrant entrepreneurs in UAE	Integrative strategies adopted	qualitative research	United Arab Emirates.	Use of social media and chat applications	Business promotion
Rivza et al.,	2019	Scopus	Digitalization as an essential growth factor contributing in SME development (experience of Latvia and Romania)	Not Apply	Descriptive survey	Romania, Latvia, Western, Eastern European	Digitization	Small Medium Entrepreneurs
Garzoni et al.,	2022	Scopus	Fostering digital transformation of SMEs: a four levels approach	Smart district 4.0: an industry technology	The case study	South Italy.	Engagement stages. digital awareness	digital transformation. change in business processes of SMEs

Salim, Sulphey,	2021	Scopus	Performance of supply chain management and digitalization of human resource information in SMEs	Not apply	Descriptive Survey	Oman	Digitalization of HR Information Practices (DHRIP)	Performance of Supply Chain Management (SCM)
Zhigune t al.,	2020	Scopus	Digitalization of entrepreneurial socioeconomic management systems	Not apply	qualitative study	Russia	Digitalization, Network of SMEs Systematic Innovation Activities	Socio-economic management systems, entrepreneurial
Naushad, Sulphey,	2020	Scopus	Prioritizing Technology Adoption Dynamics among SMEs	analytic hierarchy process (AHP)	case study based approached have been traced by Analytic Hierarchy Process (AHP) methodology	Saudi Arabia	Relative Advantage, Affordability, Ease of Use, Value Creation, Productivity, Profitability Management, Technological Self-Efficacy	Technology Adoption Dynamics, Small Medium Entrepreneurs
Chatterj ee et al.,	2022	Scopus	SME entrepreneurship and digitalization – the potentialities	Lazear's entrepreneurship theory, The conceptual model for	A descriptive survey	India.	Entrepreneurship	Adoption of Digital Technology Platforms

			and moderating role of demographic factors	entrepreneurship intention				
Akbari & Hopkins	2022	Springer	Digital technologies as enablers of supply chain sustainability in an emerging economy	Supply Chain Management	A descriptive survey	nation's 500 largest enterprises	I4.0 Technology Adoption	Supply Chain Sustainability
Bagal et al.,	2021	Springer	Small and medium sized enterprises' contribution in digital technology	E-Commerce	multiple case study. A small-scale survey, The experimental data were gathered in two stages: first, via semi-structured theme interviews, and survey	South India.	Adoption of Digital technology	Efficiency, Productivity, Product Process Quality, Demand, SME Growth,
Sassanelli, Terzi,	2022	Springer	The D-BEST Reference Model: A Flexible and Sustainable Support for the Digital Transformation of Small and Medium Enterprises	D-BEST, AIOTIDIHN Model	empirical study surveys 223	Vietnamese	DIH Functionalities (Networking, Skills & Training, Test Before Investing, Access to Funding	Adoption of Industry 4.0 (CPS), Flexibility, Interoperability, Collaboration Networks 4.0, Communication and Collabora

						); DIH Assets, Knowledge, Capabilities, Level of DIH Network Integration	tion Level, Joint Service Development, Effective Service Portfolio Configuration
Guo et al.,	2020	Springer	The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey	Digitalization and public crisis responses	Online questionnaire survey.	In mid-to late-February 2020.	Digitalization, adoption of digital technologies.	Effectiveness of Public Crisis Response, Small Medium Entrepreneurs' Performance
Corvello et al.,	2022	Springer	Thrive during a crisis: the role of digital technologies in fostering anti-fragility in small and medium sized enterprises	Not Apply	Case study approach.	Southern Italy	Use of Digital Technologies, Slack Financial Resources, Strategic Agility, Relations with Research Institutions	Anti-fragility
Faridi, Malik,	2020	Springer	Digital transformation in supply chain, challenges and opportunities	Not apply	Case study	Middle East and North Africa (MENA)	Digital Initiatives, Strategic Change Proposals,	Digital Transformation Success, Strategic Change Success,

Author	Year	Publisher	Title	Model	Method	Data	Variables	Outcome
			in SMEs: a case study of Al-Rumman Pharma				Training Programs, Transparency, Change Management Practices Knowledge Management, Technology Orientation, Market Intelligence & Orientation, Entrepreneurial Orientation, Organizational Resources, Management Structure, Organizational Culture	Employee Adaptation, Cost Savings, Reduced Chaos, Resistance Level
Lateef, Keikhosrokiani,	2022	Springer	Predicting Critical Success Factors of Business Intelligence Implementation for Improving SMEs' Performances: a Case Study of Lagos State, Nigeria	Technology acceptance model (TAM) and unified theory of acceptance and use of technology (UTAUT).	Quantitative analysis to the cross-sectional method, survey.	The questionnaires were distributed for three weeks starting from August 2020.		Business Intelligence
Witschel et al.,	2019	Springer	Riding on the wave of digitization: insights how and under what settings dynamic capabilities facilitate	Dynamic Capabilities (DC) model and Business model Change.	Comparison of two models	world wide business.	digitization:	settings dynamic capabilities facilitate

			digital driven business model change					
Song et al.,	2022	Springer	The digital transformation of a traditional market into an entrepreneurial ecosystem	E-commerce	single-case	2019 at the market's headquarters	digital transformation, ICT Adoption, E-commerce Mechanisms	entrepreneurial ecosystem
Chen et al.,	2022	Springer	Digitalization, data driven dynamic capabilities and responsible innovation: An empirical study of SMEs in China	Dynamic capabilities, data-driven' neo-institutional theory	online survey	China	Data-Driven Dynamic Capabilities, Responsible Innovation (RI) Quality	Sustainable Development Performance of SMEs
Dwivedi et al.,	2022	Springer	Social Media Adoption, Usage And Impact In Business-To-Business (B2B) Context: A State-Of-The-Art Literature Review	RI, dynamic capabilities theory, neo institutional theory	empirically analyses	China	Social Media Tools, Social Media Use Intensity, Adoption Level, Social Media Strategies	Effect of Social Media (on performance/marketing/outcomes), Effectiveness of Social Media Use
Ughetto et al.,	2020	Springer	Female entrepreneurship in the digital era	Not apply	Systematic literature review	Female entrepreneurs	Use of Digital Technologies	Creation and Conduct of New Ventures by Women, Ability to Overcome Hurdles

Research question 2: What theoretical frameworks are commonly used to explain digitalization as a predictor of undergraduate entrepreneurs?

An analytical review of the chosen research articles depicts that digitalization was conceptualized using diverse theoretical frameworks, each employing distinct constructs, hypotheses, and research methodologies. This lack of theoretical cohesion led to inconsistent results and generalizations. Research studies demonstrated usage of digital technologies based on entrepreneurships as well as adoption of digitalization such as Technology Acceptance model (TAM) (Chatterjee et al., 2022; Kimuli et al., 2021; Lateef & Keikhosrokiani, 2022), Unified Theory of Acceptance and Use of Technology (UTAUT), (Oppong et al., 2020; Lateef & Keikhosrokiani, 2022) and Technological Opportunism (TO) (Oppong et al., 2020), Fixed effects regression model (Zhao et al., 2022), Lazear's entrepreneurship theory (Chatterjee et al., 2022), supply chain management model (Akbari & Hopkins, 2022), D-BEST model, AIOTIDIHN Model, ETB model (Sassanelli & Terzi, 2022), dynamic capabilities (DC) model business model change (Witschel et al., 2019), and E-commerce model (Song et al., 2022). Various theoretical models have been summarized and elaborated in a fragmented approach. See Table 5 for details. The diverse theoretical models have been applied to examine the adaptation of digitalization and a variety of theoretical conceptualization, model adaptation, and advanced modification in the studies. See Table 5 for details.

A reviewed of studies examining the influence of digitalization on the performance of undergraduate entrepreneurs. As seen in Table 6 provides a summary of 24 published articles reviewed from 2017 to 2022.These studies have been conducted in developing countries such as China, India, Uganda, Italy, United Arab Emirates, Romania, Latvia, Western, Eastern European, Oman, Saudi Arabia, Vietnam,, and Malaysia. In terms of research methodology, quantitative, qualitative and mixed-methods approach applied in several studies. In addition to this, most of the researchers have applied various theoretical approaches in their studies to present a new dimension of theoretical fragmentation. Another finding of the review of the studies relates to the influence of digitalization on the entrepreneurship of undergrads. It has been found that scholars agree that digital technologies have a significant impact on the young entrepreneurs. Additionally, digital technologies play an effective role in the development of business in developing countries. See Table 6 for details.

CONCLUSION

The main purpose of this study is to conduct a systematic literature review to research context and theoretical frame approach used to explain the digitalization as a predictor of undergraduate entrepreneurs. A total of 24 relevant studies were analyzed, guided by specific research questions. The findings indicated a growing scholarly interest in this area. However, the literature showed an interesting significant fragmentation due to the use of multiple theoretical frameworks to explain the influence of digitalization literacy on entrepreneurs' management and performance. Key variables examined included digitalization, undergraduate entrepreneurs, and performance. This theoretical inconsistency made it difficult to generalize the results across studies. As a result, practitioners may face challenges in applying these insights effectively in product development and marketing strategies that leverage digital technologies to support entrepreneurship.

Study Implications: The findings offer both empirical and practical implications. The study highlights the necessity for additional research to establish unified theoretical frameworks that can enhance the generalization of results. From a managerial perspective, further investigations are needed to offer valuable insights to practitioners on how digitalization influences undergrads business, considering factors in the context of artificial intelligence. Such as various contexts of digitalization, different constructs, demographic diversity, and other variables that may affect entrepreneurs' responses in the era of artificial

intelligence.

Future Direction: The findings highlight present opportunities to refine research on the digital literacy, uses, management and adoption of digital technologies in entrepreneurship, an area gaining growing interest among scholars as digital technologies increasingly shape business development.

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