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DOI:

[10.1016/j.intman.2022.100948](https://doi.org/10.1016/j.intman.2022.100948)

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Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Ghauri, PN, Fu, X & Minayora, A 2022, 'Digital technology-based entrepreneurial pursuit of the marginalised communities', *Journal of International Management*, vol. 28, no. 2, 100948.
<https://doi.org/10.1016/j.intman.2022.100948>

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Digital technology-based entrepreneurial pursuit of the marginalised communities[☆]

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ARTICLE INFO

Keywords:

Digital technology
Entrepreneurship
Conceptual framework
Marginalised communities
Sustainable development goals
SDGs

ABSTRACT

United Nations' Sustainable Development Goals call for an inclusive development and empowerment of marginalised communities. However, scholars have suggested that one single discipline or party, Multinational Enterprises, Governments or NGOs, cannot tackle these issues alone. Parallel to this, nonmarket strategies emphasising the societal context of economic competition have appeared as an important topic of research. Taking an inter-disciplinary perspective, this paper examines the extant research in digital technology, entrepreneurship and development studies to identify whether these three fields can help us understand how these issues can be tackled from a nonmarket strategies' approach and propose a conceptual model. We analyse papers published from 1994 to 2018 in these fields to map the collective state of research and provide a conceptual framework. We believe that this will help in establishing a relationship between digital technology, entrepreneurship and inclusive development. It will also help us to understand how to transform the benefits of technology into jobs and income for marginalised communities. This study will encourage researchers to investigate how United Nations' Sustainable Development Goals (SDGs) can be achieved.

1. Introduction

Nonmarket strategy refers to a strategic action orchestrated by a firm to improve its performance by managing the institutional and/or societal context of economic competition; these strategies stand in contrast to those in the market environment (Mellahi et al., 2016; Frynas et al., 2017). As argued by Rodgers et al. (2019), important drivers of nonmarket literature are corporate social responsibility (CSR) and corporate political activity (CPA). Multinational Enterprises (MNEs) are thus considered important players given their global influence and the activities in which they are confronted with a range of issues in both home and host markets. Several studies have put forward drivers and mechanisms adopted by MNEs while pursuing nonmarket strategies (Rajwani and Leidong, 2019; Rao-Nicholson et al., 2019), however there is a lack of research on digital-technology-based nonmarket strategies that influence customers, markets, and other stakeholders (Chen et al., 2019; Zeng et al., 2019). A number of scholars have thus called for more research on the types of nonmarket strategies that can empower customers and positively influence society and markets (Zervas et al., 2017; Zeng and Khan, 2019). This paper responds to these calls for examination of nonmarket strategies in different contexts and,

[☆] We acknowledge the generous grant awarded by ESRC-GCRF (ES/500 1336/1) for this research project.

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in the context of the emerging economy. There is a clear need for more research on how people living in the marginalised communities utilise digital technology for capability development.

Following the United Nations Sustainable Development Goals (SDGs) agenda and collective effort from many countries, the UN 2019 report concluded that the proportion of people living in extreme poverty dropped from 36% in 1990 to 8.6% in 2018 (UN, 2019). Although this is considered a huge achievement, many questions remain regarding capability development among poor and marginalised communities (Evans et al., 2017). The operational definitions of ‘capability enhancement’ in social sciences vary and there are many aspects including: education, skills, value creation, value capture, employment and self-employment, all of which require attention from scholars from different disciplines (Hadjikhani et al., 2012; Mao et al., 2019). Considering that capability enhancement among poor people is an essential element of tackling inequalities, there is a need to comprehend what has been achieved and what remains to be understood by scholars researching this area.

We are particularly interested in understanding how capability is developed through entrepreneurial activity and what role different actors can play in this process. Research exploring entrepreneurial activity among marginalised communities has focused on different levels of analysis. For example, owners of home-based businesses face longer working hours and lower earnings than those in full-time employment; there are trading limitations and constraints and a lack of confidence in marginalised communities (Duberley and Carrigan, 2013). Some studies discuss the suggestion that the interactions between individuals and support from institutions may help to stimulate entrepreneurial activity in poorer regions (Rao-Nicholson et al., 2019). For example, Pergelova et al. (2019) suggested that entrepreneurial behaviour is embedded in a social context and, thus, entrepreneurial actions result from the interaction between the individual and the environment.

Furthermore, scholars have increasingly recognised the potential for digital technology to be part of the solution, with digital affordability being seen as having implications for value creation for all (Zeng et al., 2019). Many existing studies do not highlight synergies and/or tensions of various strands, nor do they attempt to integrate these different perspectives, although entrepreneurial effort might be the missing link in capability building. This is particularly important for the marginalised people who have limited exposure to education and, basic knowledge. As stated by Nambisan et al. (2019), different types of digital affordability might operate or assume relevance at different levels – for example, affordability associated with social media may hold implications for different types of actors (individuals, organisations and communities) in different innovation contexts (Fischer and Reuber, 2011; Treem and Leonardi, 2013). Linking research in technology and entrepreneurship would help us understand the potential benefit of digital technology to create value for marginalised communities.

One of the opportunities arising from the challenges and recent developments in the field is the possibility to review academic literature with an interdisciplinary approach to develop understanding of how digital skills and knowledge are acquired by entrepreneurs from marginalised communities when they start entrepreneurial activity. Several scholars have called for interdisciplinary reviews to encourage multi-theoretical integration (Mellahi et al., 2016; Zeng et al., 2019). This paper addresses these calls for action by reviewing literature on digital technology, entrepreneurship and marginalised communities and developing a conceptual framework to better understand:

- (1) How marginalised communities are understood in entrepreneurship research i.e., how are they defined?
- (2) What are the dimensions/characteristics that the literature has not considered so far?
- (3) How does digital technology combined with entrepreneurial activity contribute to capability enhancement in these communities?

We study these three questions to produce a holistic review and an understanding of the phenomena that complement the current research regarding marginalised communities. To achieve this, we have employed a systematic literature review based on a comprehensive selection of literature up until 2018. Hence, our dataset reflects the evidence-based research in entrepreneurship and digital technology to map out the state of the research that is focused on the problems related to inclusive development. Finally, we propose a conceptual framework that introduces the ways in which digital technology can be part of the solution for marginalised communities to start their entrepreneurial journey.

2. Definitions

Digital technologies, infrastructure or artifacts that use the power of computing and omnipresent public networks (Nambisan, 2017). The examples of artifacts are websites available on the world wide web, smartphone apps, the Internet of Things (IoT) and connected devices (Von Briel et al., 2018). Many studies conducted in this area include digital start-up companies (Shane and Venkataramen, 2000) or those in the early stages of development and growth in which digital technologies enable (at least) a component of a business model. However, not many studies focus on an individual entrepreneurial model.

3. Prior research on the marginalised community, entrepreneurial pursuit, and the role of digital technology

The primary focus of entrepreneurship literature has been on understanding the source of uncertainty that underlies entrepreneurial pursuits (Schumpeter, 1934) and factors affecting the external aspects of entrepreneurship such as capital required to start an entrepreneurial activity as well as access to networks. Despite the significance, however, existing research in entrepreneurship has largely neglected the role of digital technologies in entrepreneurial pursuit (Nambisan, 2017). In addition, empirical research on entrepreneurship is mostly focused on highflyer start-ups in developed countries. From the developing country perspective, there is a

dearth of studies on entrepreneurial pursuits by marginalised communities. Previous studies in the use of digital technology reflect implications of the ability to transform the nature of uncertainty in the entrepreneurial processes and outcomes (Nambisan, 2017) as well as the high cost of using technology or the difficulty to access technology, which are primary barriers for technology adoption. However, two important aspects are worth highlighting here. While commercial/rent-seeking entrepreneurship has been established as an important stream of business research, social entrepreneurship has been gaining some attention due to its potential for poverty alleviation in recent years (Estrin et al., 2013; Ghauri et al., 2014).

Technology entrepreneurship, on the other hand, has mainly focused on entrepreneurship as practiced in technology-intensive environments wherein technology is treated as a context for empirical work (Bingham and Haleblan, 2012). Limited effort has been made on theorizing on the role of specific aspects of digital technologies in shaping entrepreneurial opportunities for the marginalised communities.

The purpose of this paper is thus to provide a systematic literature review to connect the fields of entrepreneurship, digital technology and inclusive development. This will enhance our understanding of these disciplines and the interaction between them. We selected the articles through a systematic approach, resulting in a list of 60 articles published in scholarly journals. Through systematic review, we identified contextual dimensions of entrepreneurship to understand how to transform the benefits of technology into jobs and income generation, especially for marginalised communities so that it can contribute towards inclusive development.

4. Methodology

Despite a significant number of studies in technology and entrepreneurship, unfortunately little attempt has been made to explore whether there is a link between the two themes that support the growth or the quality of life of poor people. The complex issue of lack of access to education, and little exposure to technology among the poorer people requires a comprehensive review to explore all aspects of the existing literature and empirical evidence.

The *systematic literature review* (SLR) methodology has been discussed in detail elsewhere (Tranfield et al., 2003; Pittaway et al., 2004; Gaur and Kumar, 2018). This section will explain how SLR was used in the context of this inter-disciplinary study concerning international business (IB) and inclusive development. In recent years, the focus of IB research has been moving towards understanding the externalities of activities of Multinational Enterprises (MNEs). The role played by businesses in poverty alleviation and reducing inequalities has become part of the IB research portfolio. However, it is not clear how much research is being done and how this interdisciplinary nature of IB research is being dealt with. We, therefore, intend to synthesise this research to develop a conceptual model that helps us understand the interaction between these different phenomena.

Thorpe et al. (2005) discussed the idea that the basic principles of SLR are to provide transparency, clarity, accessibility in a focused and thorough manner into these disciplines. In the effort to produce a systematic review, the original SLR method proposed by

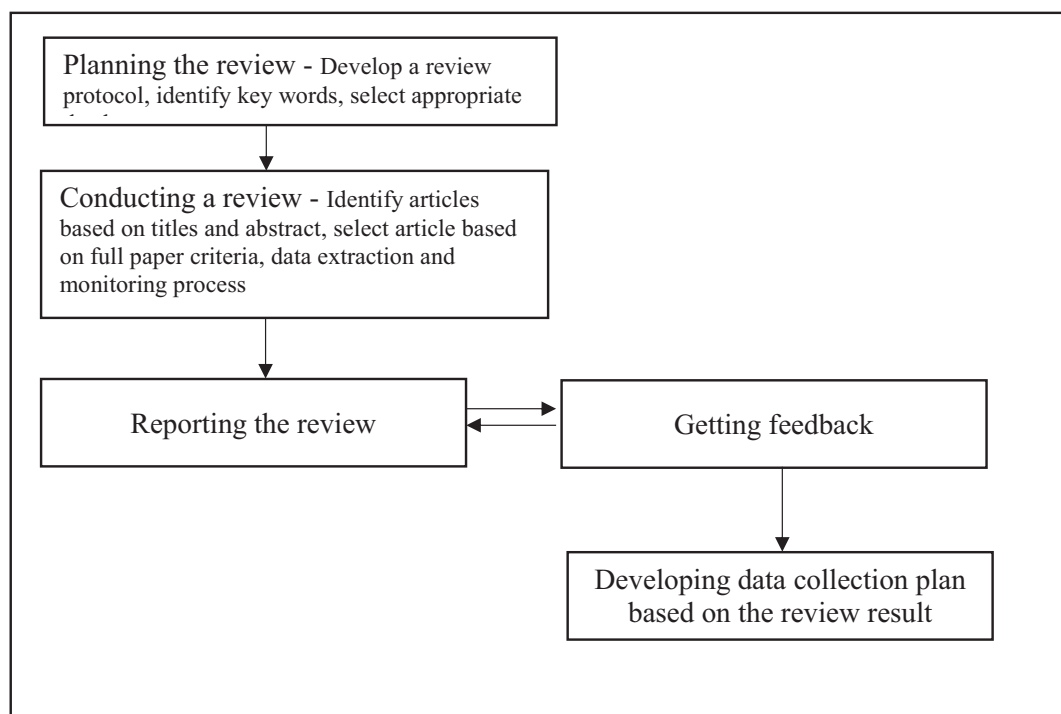


Fig. 1. Literature search process.

Source: Adapted from Tranfield et al. (2003).

Tranfield et al. (2003) has been adapted for this study as our aim is to enhance the understanding of connections between digital technology and entrepreneurship through the lens of inclusive development, we have thus made some adjustments (Rajwani and Leidong, 2019). However, the basic principles are maintained throughout the process. To review and synthesise research in a systematic manner as suggested by several scholars (Durugbo, 2016, 2020; Liedong et al., 2020), we pursue the following steps: (I) *planning the review* – the initial stage of systematic review includes delimiting the subject area or topic, mainly for a study that involves cross-disciplinary perspectives. In this case, we limit the selection of articles through a search using three keywords: digital technology, entrepreneurship, and inclusive development. The stage also includes a brief overview of the theoretical, practical, and methodological debates surrounding these fields. (II) *conducting the review* – this process begins with the identification of keywords and search terms, which are built from the scoping study, followed by deciding the most appropriate study to be reviewed; the output of the information search should be a full listing of articles on which the review will be based. (III) *reporting and dissemination* – providing descriptive analysis and thematic analysis of the field outlining what is known and established in the literature and the core contributions. Fig. 1 presents the adaptive logical search to best address the process we have followed.

Relevant literature including entrepreneurship linking to digital technology was found in a variety of disciplines within entrepreneurship studies. To be consistent with the systematic literature review process and to enhance the quality of the review, the following criteria were established:

1. ABI/Inform, Scopus and Web of Science are chosen as the business research databases (Seuring and Müller, 2008).
2. Only articles published in Social Science Citation Indexed journals are considered. Books, chapters in books, conference proceedings and working papers are not included to ensure a consistent process, meaning that all samples have been through a peer-review process.
3. Both conceptual and empirical papers (in English) are taken into consideration.
4. The content analysis is extracted from the selected literature using both qualitative and quantitative approaches.
5. The substantive relevance of the articles which are focused on *entrepreneurship* and *digital technology* is ensured by requiring that all selected articles contain the two keywords in their abstract, keywords or title. (Initially the search string also included another search item *poverty alleviation*. This basic search resulted in 0 papers; therefore, the additional search item of poverty alleviation is manually reviewed by using the publication title and abstract).
6. All the articles selected in the earlier phases are scanned by reading their abstract to ensure substantive content.
7. All abstracts are downloaded and imported to NVivo coding software.

Finally, a sample of 60 articles emerged from the combined string search of ‘entrepreneurship’ and ‘digital technology’ from these academic sources. The literature review entails content analysis on articles published from 1994 to 2018 (25 years of research). The purpose of analysing 25 years of literature is because there has been a significant growing interest to link technology, especially *Information Technology* (IT), and entrepreneurship since 1994. Business and technology alignment generally refers to applying technology in a proper and timely fashion to harmonise with business requirements and goals (Luftman et al., 1999; Alaceva and Rusu, 2015). More importantly, the alignment of the two field studies remains one of the main research streams in information technology studies, as well as constantly ranking among the top three concerns in computer studies.

As a starting point, we explored and reviewed scholarly articles to see how the topic has been dealt with by academics and whether we could map the field to ensure state-of-the-art knowledge. This systematic review procedure enabled us to identify divergent empirical claims in the academic literature and point to fruitful lines for future research. We continued by selecting the literature

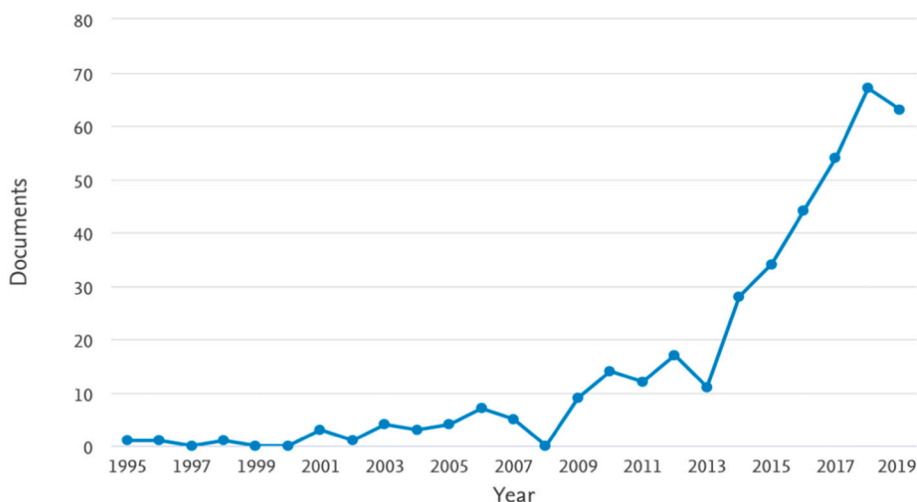


Fig. 2. Overall trend by year of publication.

Source: Authors compilation from ABI/Inform, Scopus and Web of Science.

databases and relevant archived journals, followed by creating keywords based on three dimensions to construct our search queries. Following this, we generated a bibliometric overview of the literature and its use of different dimensions. We coded papers on whether they employ a theoretical or empirical approach to explore whether there is a link or support from the existing themes of digital technology, entrepreneurship and inclusive development.

4.1. Data sources

Important tools for our systematic literature review were Scopus, ABI/Inform, and Thomson Reuters Web of Science databases which provided us with a wide range of searchable journals, as well as powerful search engines. Therefore, our second stage selection comprised 77 articles. We removed 17 as these were duplicates because of overlapping results between databases.

4.2. Keywords

Identifying all relevant papers using keywords was an important step during the review process. Our first keywords identified any study on “entrepreneurship” that also considered the element of digital technology. The final selection of 60 papers is detailed in [Appendix 1](#) – the sequence of the table is based on the year of publication and not by alphabetical order of authors. We also provide the name of the journal it is published in, the key findings, the theoretical lens used, and the methodology applied for each paper (please see [Appendix 1](#)).

The distribution of the selected publications by year is also shown in [Fig. 2](#). We can see that the number of articles on these topics increased continuously since the year 2007. The main surge, however, appeared after 2013; we believe this was a direct impact of the United Nations conference on Sustainable Development (Rio + 20) that took place in 2012. We believe that these topics have become the trend after the United Nations Member States adopted the outcome document in which they introduced the development agenda for 2030 and Sustainable Development Goals (SDGs).

We also found that most of the articles focus on developing countries' context, especially South Africa and India. This is understandable given the population, poverty, and the need for economic growth in these countries. However, we also note that there is a significant gap in research which includes other countries on these topics. It is important for further studies to include other major countries such as Bangladesh, China, Indonesia, Nigeria and Pakistan. As the distribution of these articles is highly skewed across journals, we consider that the integration between the topic of entrepreneurship and other disciplinary areas such as digital technology needs to be tightened. In the following section, we begin our review process by identifying business and entrepreneurship literature related specifically to digital technology.

Following this, abstracts were extracted, imported, and coded into NVIVO according to their content and were reviewed according to their relevance.

4.3. Thematic analysis

The thematic analysis was first conducted by reviewing abstracts for each citation in detail using narrative coding. This method has some advantage in creating a thematic structure. A more detailed reviewing process took place, for example to understand what has been studied, what is missing, and how we should study the link between the three themes. To better understand how the linkage between entrepreneurship and digital technology has been studied, we uncovered three multidimensional perspectives on both themes.

The thematic analysis was undertaken, as it provided an overview of what is known and established the degree of consensus that is shared across different themes. The review involved identifying themes on subjects based on their prior phenomena, then developing these themes into a framework for analysis. Themes included the following: digital technology, social entrepreneurship, and inclusiveness. The resulting articles were then assessed for relevance. Based on these categories, the thematic framework illustrates several relevant points to guide the explanation of the evidence-base as follows: (1) a holistic approach to social enterprise may need to be developed to provide multiple levels of analysis. For example, the model that emerged from the literature suggests that study of entrepreneurship at the level of individual value creation is inherently embedded in a wider context of culture and policy for small businesses. Therefore, debate about entrepreneurs from marginalised communities sits within the context of what is understood or may be included in the practice of community; (2) it is possible to systematically understand entrepreneurship, in the sense of being able to identify contextual factors: skill levels; local policy; access to education; access to technology; and the limited opportunities.

From the thematic analysis, we have noted that entrepreneurship, as a growing research field, can be further integrated with

Table 1
Nature of studies reviewed.

Research design	Deductive 27 papers (45%)	Inductive 22 papers (37%)	Mixed 11 (18%)
Type of paper	Conceptual 19 papers (32%)	Empirical 41 papers (68%)	
Type of interpretation	Qualitative 36 papers (60%)	Quantitative 16 papers (26%)	Mixed 8 papers (14%)

Source: Authors compilation from the literature review.

different levels of research endeavour to be better linked in debates on development, such as inclusivity, social entrepreneurship, and small businesses in a climate of poverty. These papers were also categorised according to the type of studies, namely conceptual, inductive and deductive (Table 1). Considering the new nature of the topics, we see that majority of studies undertaken were of inductive nature.

5. Literature review on digital technology, entrepreneurship, and the marginalised communities

We began our review by identifying entrepreneurship literature related specifically to digital technology to build on previous findings when reviewing for the broader topic. The SLR has provided an effective method for thematically mapping out the entrepreneurial research and the poverty, as well as for allowing the linkage to digital technology that has not been done previously. The review highlights several areas that are contributing to the understanding of marginalised communities. However, there are also areas for development and gaps in the knowledge base, and research themes where cross-disciplinary knowledge is integrated, as described below.

Despite there being substantial research on information and communication technology, most of the research focuses on the evaluation of its impact on development (Heeks, 2010; Fu, 2013; Fu and Akter, 2016). Less is known about how to transform the benefits of technology into jobs and income for people in vulnerable situations. Thus, the purpose of this paper is to systematically review the link between entrepreneurship and poverty alleviation through digital technology. The evidence is fragmented, ranging from the success story of hi-tech start-up companies such as Airbnb and Uber and the scale of their operations to the social-critical perspective of digital entrepreneurship. There is also clearly a reasonable quantity of empirical evidence leading to a limited potential for entrepreneurship studies across space and time. For example, in some areas, there are only a few empirical studies (e.g., when examining the role of women in the small-scale agriculture business) and in other areas the theoretical foundations of the inclusivity studies are limited. We conclude that more in-depth evidence-based studies are needed of entrepreneurial activity among marginalised communities.

For this purpose, we limited our focus of research to approaches that deal with these issues in the context of opportunity creation for marginalised communities (Ghauri et al., 2005; Tasavori et al., 2015). Multilevel factors have been documented as being related to potentials in digital entrepreneurship contexts - such as digital technology as an enabler (Nylén and Holmström, 2019). Based on the extensive body of literature linking the benefit of digital technology to entrepreneurial activity, policymakers in many countries have attempted to stimulate economic benefits by encouraging the marginalised groups, such as women and youth to create entrepreneurial ventures (Marlow and Swail, 2014; Martinez Dy, 2019). Evidence includes the material investments such as government initiative in providing broadband diffusion (Liu, 2017) and the shifting patterns of entrepreneurial activity, for example women's self-employment, as a driving force in the labour market (Klyver et al., 2013). However, the overarching messages about digital technology and entrepreneurship neither account for nor investigate how digital technology can help those marginalised or under-represented groups to create jobs/income, and what are the processes required for individuals living in poverty to reap the benefits of technology that can lead to entrepreneurship. For marginalised communities, the dynamic and the variety of the processes involved to acquire technology are still under-explored and under-theorized.

It is evident that the extant set of studies on digital technology and entrepreneurship have largely focused on issues at the individual level of analysis, by informing our understanding of how digital technologies, both platforms and infrastructures, promote capability enhancement by increasing the employment opportunity through self-made mechanisms. Taking the agriculture industry as an example, the literature suggests including farmers as actors that create and develop innovative business, as in this type of farm entrepreneurs blend the risk taking with agriculture-related business ventures that in turn enable economic activity to develop (Ratten, 2018). Nambisan (2017) also emphasises the need to focus on the human aspect and social element to truly understand how entrepreneurial opportunities are formed and enacted in an increasingly digital world. Studies acknowledge the missing link between the effort to encourage marginalised people to adopt technology and the effort to educate them to use technology. Several of these studies

Table 2
Research on technology and entrepreneurship at individual level.

Article	Objective	Method	Finding(s) related to the review
Orser et al. (2019)	To close gaps between knowledge, ICT adoption and the provision of entrepreneurship education	Empirical findings are drawn from 21 semi structured interviews	The finding validates differing training expertise regarding digital technology among women entrepreneurs
Nambisan (2017)	To gain a deeper understanding of the implications of more fluid entrepreneurial boundaries and the associated entrepreneurial uncertainty	Conceptual	The finding elucidates the potential implications of research for innovators and entrepreneurs in industries across digital spectrum
Ratten (2018)	To discuss how to connect farms to society through digital technology and communication	In-depth interviews of 15 Australian farmers	The findings suggest that digital social farm entrepreneurship can be categorised into social bricoleurs, social constructionists, and social engineers
Giones and Brem (2017)	To examine the topic of technology entrepreneurship from three angles: opportunity, process, and acquisition	Conceptual, using MacInnis (2011) approach	The findings identified and described characterisations of technology entrepreneurship, digital technology entrepreneurship, and digital entrepreneurship
Boellstorff (2019)	To understand the disability experiences of entrepreneurship, that focuses on the intersections of creativity, risk, and inclusion	Ethnography analysis of multi-year research project in the virtual world	The finding reveals how digital technology reworks the interplay of selfhood, work, and value for disabled entrepreneurs

deal with these opportunities at different levels, individual and contextual levels. Tables 2 and 3 illustrate this distinction in the literature.

Previous studies acknowledged the absence of entrepreneurial educational processes such as training, research and development, developing human capital, empowerment, and capability enhancement. The following section presents an insight as to the (missing) relationship between the benefit of technology and entrepreneurship activity to advance understanding and debate in the pursuit of inclusive development. The aim is mainly to understand the relationship between technological entrepreneurship and socio-economic changes (Li, 2018).

The above arguments illustrate the ways in which entrepreneurship research would benefit from engaging more with multilevel insights. Entrepreneurial activity relies on the accumulation of certain key resources over the course of an individual's life – including families, education, and employment (Lee et al., 2014). Such challenges may include barriers to education as well as the difficulties to fund and to start new ventures (Fitz-Koch et al., 2018). This perspective therefore illustrates how entrepreneurial activity is constrained by the absence of resources and education. From the coding process, we identified a second order of themes related to the barriers to the adoption of digitization such as – (1) ability, skills, and experience, (2) financial resources, (3) support network, (4) conventional perspective of income, and (5) lack of emphasis in technology adoption – outlined in Table 4 below.

We believe that such themes that are essential to digital technologies could serve as a conceptual link between the integration of knowledge from different subject areas of entrepreneurship, digital technology, and inclusive development. We then summarise contributions of the selected papers presented in this systematic review, relating them to one or more of these themes and outlining their impact for future research. We highlight that there has been a missing link between three interrelated elements of the digital technology environment that could benefit the people in vulnerable situations; this missing link is the availability of entrepreneurial education and training for the poor.

A critical review of the earlier research helps to develop a conceptual framework to examine a digital technology-based business model for sustainable inclusive development. Scholars have identified the importance of technology for information exchange and knowledge development. While findings are contingent on the type of technology and context, the major assumption is that the technology could contribute to the socio-economic development, especially through facilitating the marginalised entrepreneurs and communities. Accordingly, our paper argues that the time is right to start rethinking the role of revitalisation through entrepreneurial education. This is a critical step to move up to further growth, as also stated in Li (2018) that one can no longer rely on low-cost labour production to compete in the twenty-first century. This reflects the proposed framework to create a model that promotes education, including entrepreneurial education, to bridge the gaps between technology and entrepreneurship.

In China, for example, a population that received formal education either locally or abroad has managed to acquire international experience and capability including technology skills. As much as technological accumulation has benefitted globally minded people, the problem remains for poorer people living in the same area. Addressing such challenges, however, will require developing a deeper understanding of the tensions that underlie the goals and motives of actors at different levels. More broadly, entrepreneurial education mechanisms, in conjunction with digital technology approaches, might enable the resolution of challenges in increasing skills and capability, which in turn brings a sharp focus and benefit for the lives of people in marginalised communities. Digital technologies can help marginalised people in their effort to become entrepreneurs by improving efficiency and allowing people to better communicate with various networks (seller to sellers, seller to buyers, and seller to distributors).

6. Discussion

Our review confirms findings of earlier studies that literature on externalities of MNE actions and about their non-market activities are scarce and we need to be doing more research on these topics (Siegel, 2007; Mellahi et al., 2016). Considering the United Nations' sustainable development goals, this has become extremely important. MNEs are now supposed to contribute towards reducing inequalities and sustainable development, that can only be achieved through non-market strategies and activities. This also demands more interdisciplinary studies and combination of theories from different areas of research to enable MNEs to consider rather heterogeneous stakeholders in their strategies. Influential political and social actors can therefore derail MNE strategies and plans (Sun et al., 2010; Dieleman and Boddewyn, 2012). The performance of MNEs is thus not only dependent on their market based competitive strategies but also on their non-market and stakeholders-based activities. This is a clear shift from shareholder perspective to

Table 3

The potential of technology and entrepreneurship at context-level.

Article	Objective	Method	Finding(s) related to the review
Song (2019)	To advance understanding of digital entrepreneurship in the broader context of digital platforms, users, and institutions	Conceptual, using DEE framework	The proposed reconfigurations have clarified and identified digital platforms as the core of DEE that facilitate entrepreneurship in digital age
Pergelova et al. (2019)	To explore how digital technologies can enable the internationalisation of women-owned SMEs.	Secondary research using data set collected by the Bulgarian SMEs' promotion agency	
Rippa and Secundo (2019)	To shed light on the adoption of digital technologies and their effect towards academic entrepreneurship	Qualitative literature review, deductive	The conceptualisation of Digital Academic Entrepreneurship with an emphasis on leveraging new digital technologies to shift the traditional modes of academic entrepreneurship

Table 4

Digital technology and the challenges for the poor.

1st order barriers	2nd order themes	Antecedent of adoption	Level of analysis
Less knowledgeable about technology	Knowledge gap	Individual constraint	Micro
Reluctant to start ICT adoption due to lack of knowledge			
Less exposed to tech			
Inability to link tech and income	Ability, skills, experience		Micro
Lack of literacy			
Lacking confidence to adopt tech			
Reliance on experience with tech	Financial resources		Micro
Less money for IT adoption			
Microbusinesses not seeing result from ICT			
Lack of funds to adopt tech	Support network	Facilitating conditions	Meso
Don't consider ICT a necessity			
Lacking access to loan			
Lack of access to tech (device)	Conventional income	Culture	Macro
Limited conversation about ICT			
Limited success story of the use of ICT			
Lack access to courses	Lack of emphasis		
Unable to identify which tech works			
Lack of connection to network			
Reliance on income from labour industry			
Reliance on male figure to provide family			
Priority over basic household expense			
Lacking learning environment			
Lacking discussion about tech			
Tech doesn't address the problem with the poor			

stakeholder perspective. As suggested by Mellahi et al. (2016) researchers could borrow from social movement theory to tackle the interaction between market and non-market theories.

We believe that alternative theories and conceptualisation is needed to incorporate new ways of evaluating the effectiveness of MNE strategies. We need to gear the use of resources, particularly technological resources, towards capability enhancement of marginalised communities. The themes and levels of analysis discussed here are influenced by other factors and demand additional research. However, an interdisciplinary approach offers greater levels of access for the marginalised communities to engage in entrepreneurship and pursue different paths to capability enhancement in the long run this will also strengthen the competitive position of firms. Some studies have made attempts to uncover the impact of digital technology on entrepreneurship and innovation (Fu and Gong, 2011; Nylén and Holmström, 2019) in more specific terms. These studies have shown that digital technology may help generate new entrepreneurial opportunities. The potential for the less pre-defined nature of entrepreneurial agency supported by digital technologies implies change in entrepreneurs' behaviour and actions (Nambisan, 2017).

In this vein, one stream of research has focused on the digital transformation of the entrepreneurial process (Orser et al., 2019; Nambisan et al., 2019; Arvidsson and Mønsted, 2018) and digital innovation (Von Briel et al., 2018; Tumbas et al., 2018; Nylén and Holmström, 2019). A second stream of research has focused on value creation through technology (Amit and Zott, 2012; Fu and Gong, 2011; Tsindeliiani, 2019). Furthermore, innovation in digital technology and non-market strategies hold implications at wider regional and societal levels with the potential of informing policymakers and social actors. For example, studies have indicated how digital technology has increased entrepreneurial activity and public funding (Cooke, 2017) that initiated new regulations and policies related to intellectual property rights, data privacy and security (Avgerou and Li, 2013). However, little is known about how these three different levels of engagement (individual, organisation, and context) interact to better encourage and expose the marginalised communities towards the greater benefits of technology. Thus, although conducting such studies that investigate across levels of analysis continues to be challenging (Eckhardt et al., 2018), the integrated themes and concepts that underlie entrepreneurship and digital technology may bridge conceptual gaps and open empirical possibilities.

7. Implication for future research

It is well established that knowledge plays a crucial role in opportunity recognition (Ghauri et al., 2005). This is because to identify opportunities, entrepreneurs must have some knowledge about their chosen market as well as non-market context, means of capital, government policies, and economic ecosystem. Conversely, lack of knowledge about access to networks and non-market context has been found to be a major barrier for poorer entrepreneurs to start a business (Johanson and Vahlne, 2009). The effect of formal and informal education on marginalised communities in endorsing entrepreneurship has not been explored. In traditional links between technology and strategies, the focus has been around the application of technology to promote the commercialisation of a product and/or service, whereas our study proposes that digital technology and entrepreneurship are embedded in the interconnected ecosystem where non-market context matters.

In recent years, research has found that entrepreneurship and innovation play important roles in income growth and job creation and hence poverty reduction (Bhagwati and Panagariya, 2013; Ghauri et al., 2018). Digital technology can empower poor people to start entrepreneurial activities with more choices and opportunities as they are at the base of the economic pyramid, but not at the

bottom of the non-market knowledge and skills pyramid (Leong et al., 2016). Young people are receptive to new technologies in the digital era, but the gender gap remains in terms of access to adoption and use of technology, although gender inequalities are barriers to women's participation in economic activity (Mair et al., 2012; Fu and Akter, 2016). To explore this, researchers might take an interdisciplinary perspective that captures the complexity from the stakeholders' perspectives, including MNEs, civil society, and policy makers. Existing research has largely been confined to specific fields or disciplines (information systems, market strategies and economics) and arguably limited effort has been made that may help overcome underlying issues of capability enhancement that often lie outside the economic ecosystem. Furthermore, at a firm level, many researchers have examined the competitive actions enabled by technology features to achieve organisational goals. Further research is required to explore linkage between poorer entrepreneurs' efforts to create value for the users of their products and services.

8. Conclusions

Our systematic review reveals that research and policy have so far ignored any studies that aim to identify, establish, and actively promote the non-market context. The literature finds that adoption of market knowledge and technology among the poor reflects country-level differences due to culture and education levels, non-market context (Orser et al., 2019). This finding aligns with the United Nations Conference on Trade and Development (UNCTAD, 2019) Digital Economy Report 2019 on country disparities, associated technology penetration and adoption, especially in developing economies. The main factors responsible for low rates of technology adoption and entrepreneurship within developing countries are the disparities in skills, access to technology and lack of education that lead to limited opportunities for this group. Our paper, however, demonstrates that interdisciplinary research is possible especially under new realities and in connection with United Nations SDGs (Ghauri et al., 2021). Moreover, the research needs to look at the impact of non-market activities on different levels, individual, organisations and society in general (Lawton et al., 2013).

The limited empirical research on the use of digital technologies and technology-based capability building is contingent on learning by doing, access to training, collaborations and networks and on competitive endeavours. This confirms conclusions by earlier studies that stakeholder theory, micro foundations, dominant logic and institutional theories can contribute towards analysing the impact of non-market activities (Mellahi et al., 2016; Elg et al., 2017; Elg and Ghauri, 2021). Bringing the given arguments together, we expect that our review will mediate the relationship between entrepreneurship and inclusive development as we can directly relate the challenges faced by these communities to a potential entrepreneurial education system (Fig. 3). In doing so, our study joins an emerging stream of critical technology and entrepreneurship research by pointing to mechanisms that can influence inclusive development for marginalised communities (Zeng and Khan, 2019).

Scholars have suggested that the increasing awareness, adoption, and diffusion of digital technology allow novel forms of interactions, partnerships and co-creating knowledge. Different contexts suggest the promise of different layers of research to inform the technology-based entrepreneurship. Different contexts could potentially explain how and why similar digital models may lead to different entrepreneurial outcomes. Our proposed framework believes that, through training, education and competitive environment built around digital technology, we can achieve capability enhancement among the marginalised groups especially in developing countries.

The interaction of business model and digital technology for jobs and income creation has not yet been systematically studied. All these interdisciplinary lenses help us to understand how digital technology redefines entrepreneurship to include entrepreneurs from marginalised communities. More theorizing is needed, all these potential interdependencies indicate not only promising research possibilities but also the conceptual framework that allows deeper understanding of how digital technologies redefine entrepreneurship leading to inclusive development.

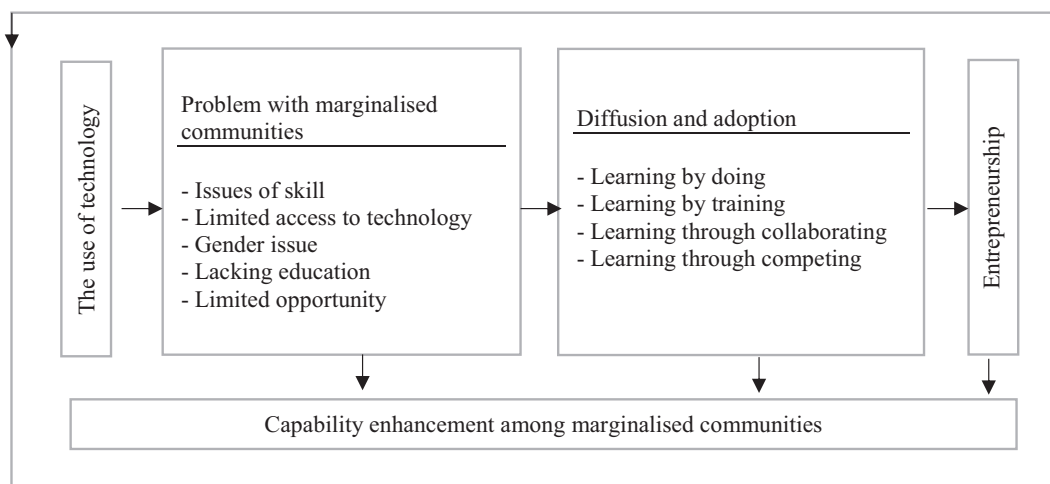


Fig. 3. The role of digital technology in capability enhancement of marginalised communities.

Appendix 1. Articles reviewed in detail

No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
1	Technology adoption and gender-inclusive entrepreneurship education and training. Orser, B., Riding, A., Li, Y. International Journal of Gender and Entrepreneurship	2019	The paper specifies and validates gender influences in the digital economy through Canadian ICT adoption programme. Digital skills are identified and strategies to close gender barriers are described.	Empirical research drawn from 21 semi-structured interview.	Entrepreneurship, ICT, gender equality.	Perceptual data could be idiosyncratic to the sample.
2	The Digital Entrepreneurial Ecosystem - a critique and reconfiguration Song, A. Small Business Economics	2019	Reconfiguration of DEE (Digital Entrepreneurial Ecosystem) framework highlighting the importance of sustainability that protects user privacy and secure digital infrastructure.	Grounded theory.	Entrepreneurship, digital governance.	Further empirical data is required to test the reconfiguration
3	The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes Nambisan S., Wright M., Feldman M. Research Policy	2019	Three themes related to digitization (openness, affordances, and generativity) were identified to serve as conceptual platform that allows integration of ideas from different disciplines.	Review of 11 papers	Digital technology literature, Innovation and Entrepreneurship	The broader implication is required for complementary policy framework to accompany digitization.
4	Digital academic entrepreneurship: The potential of digital technologies on academic entrepreneurship Rippa, P., Secundo, G. Technological Forecasting and Social Change	2019	Interpretive framework for the conceptualisation of Digital Academic Entrepreneurship was emerged as a missing link between digital technology and academic entrepreneurship.	Qualitative literature review	Innovation, Entrepreneurship, Technology Entrepreneurship, New Venture Creation.	The examined literature is not exhaustive, and not systematic.
5	The opportunity to contribute: disability and the digital entrepreneur Boellstorff, T. Information Communication and Society	2019	The conception of Disability Entrepreneurship was presented in the debates towards better understanding the emerging digital economies.	Drawing on data from 'Second Life' - a multi-year research project in the virtual world using participant observation and interviews.	Digital Technology, entrepreneurship,	Future possibilities are required for disability inclusion to broaden the intersection of disability studies and digital studies
6	Proposals for a digital industrial policy for Europe Gruber, H. Telecommunications Policy	2019	The proposal lined out the future orientation of an updated industrial policy in the EU that considers the radical changes induced by digitalisation.	Observation of the EU initiatives on the Digital Single Market Strategy	Digital technologies, industrial performance, industrial policy	Secondary data, usefulness could have been enhanced if backed up by primary data.
7	Democratizing Entrepreneurship? Digital Technologies and the Internationalization of Female-Led SMEs Pergelova A., Manolova T., Simeonova-Ganeva R., Yordanova, D. Journal of Small Business Management	2019	Digital technologies impact positively on SME internationalisation.	300 Bulgarian SMEs used as representative data to test the hypotheses	Digital technology, internationalisation and RBV,	No data on the ownership and management structure of the venture. Detailed information about the management team would have allowed a more granular analysis on gender effects.
8	Levelling the playing field? Towards a critical-social perspective on digital entrepreneurship Martínez Dy A. Futures	2019	The paper offers a broadly applicable typology of digital entrepreneurship activity based upon 4 dimensions that reveals undertheorized barriers	A conceptual paper	Neoclassical economic entrepreneurship theory, cyberfeminism theory of technology.	Structural obstacles to business development, investment, and sustainability for a variety of digital businesses, and the diverse entrepreneurs-not focused.

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
9	Innovation and Entrepreneurship: Journalism Students' Interpretive Repertoires for a Changing Occupation Singer J.B., Broersma, M. Journalism Practice	2019	to entry 'digital enterprise'. Students perceive both innovation and entrepreneurialism as a new tool in journalism i. e., they are needed to enable the industry to respond to the fundamental ongoing disruption it faces.	Questionnaire data collected from two leading journalism programmes in Britain and the Netherlands.	Innovation, entrepreneurship, journalism innovation, entrepreneurial journalism.	Somewhat fragmented and not focused. Comparability of data should have been discussed.
10	Becoming a personal style blogger: Changing configurations and spatiality of aesthetic labour in the fashion industry Brydges, T., Sjöholm, J. International Journal of Cultural Studies	2019	Digital technologies have created new possibilities in terms of subjectivity, individual expression and professionalisation resulted in new forms of aesthetic labour on self-governed online practices.	In depth case study analysis using 960 blog posts and 1493 Instagram photos to trace nine-year evolution from personal style blog to a commodified lifestyle.	Entrepreneurship, female entrepreneurial activity, online entrepreneurship	The study only includes the practice and spatiality of bloggers in the US, it would benefit from exploring a wider range of geographic contexts.
11	Digital innovation in context Exploring serendipitous and unbounded digital innovation at the church of Sweden. Nylen, D., Holmstrom, J. Information Technology and People	2019	Digital technology plays a role in the editability and programmability of digital artifacts and triggered unexpected new behaviours in digital innovation.	Interpretive case study of the Church of Sweden tracing in details the governance of an interactive website for digital prayer, The Prayer Web (PW)	Digital innovation.	The study used a single novel web-based digital artifact and could be enhanced by investigating other types of artifacts and the relationship between digital innovations in an organisation overtime. Research exploring gendered differences in digital entrepreneurship is required to further enhance the understanding.
12	The digital revolution - digital entrepreneurship and transformation in Beijing Hansen, B. Small Enterprise Research	2019	Digitalisation has rejuvenated entrepreneurship in China yet that progress is dependent on a supportive political, economic, and social environment.	Empirical research utilising data from 20 semi-structured interviews with entrepreneurs.	Institutional theory, entrepreneurship, innovation, and digitalisation.	The number of countries included in the study given the data is available in the used databases. This study could be extended by using another type of methodology to quantify this effect.
13	Sustainable development, economic and financial factors, that influence the opportunity-driven entrepreneurship. An FsQCA approach Cervello-Roy, R., Moya-Clemente, I., Perello-Marin, M.R., Ribes-Giner, G. Journal of Business Research	2019	High opportunity-driven entrepreneurship combined with a low country risk level can reduce the inequalities.	fsQCA methodology to examine the relationship between motivational entrepreneurship index and the predictors.	Innovation, entrepreneurship	The number of countries included in the study given the data is available in the used databases. This study could be extended by using another type of methodology to quantify this effect.
14	Emerging digital business models in developing economies: The case of Cameroon. Boojihawon, D.; Ngoasong, Z. M. Strategic Change Briefings in Entrepreneurial Finance	2018	Digital entrepreneurs require business knowledge/skills and institutional support to create a network infrastructure to effectively generate and capture revenue.	Purposive sampling, interviews, content analysis of digital business model in Cameroon	Digital entrepreneurship, business model concept, ICT.	By adopting purposive sampling, the findings can be argued to only be relevant to the specific setting (Cameroon).
15	Generating innovation potential: How digital entrepreneurs conceal, sequence, anchor, and propagate new technology Arvidsson, V., Mønsted, T. Journal of Strategic Information Systems	2018	Digital entrepreneurs generate innovation potential by propagating new technology synergistically. This can be used by organisation to manage corporate entrepreneurship with digital technology.	A case study of digital entrepreneurship at a Norwegian hospital.	Digital entrepreneurship, innovation, corporate entrepreneurship.	The finding arguably only relevant to the specific setting of Norway.
16	Selling tech to teachers: education trade shows as policy events.	2018	The role of tradeshow in consolidating policy networks and	In-depth event ethnography of one large	Digital technology, digital education, entrepreneurship.	Teacher and other stakeholders are involved in the study to

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
17	Player-Koro, C., Bergviken Rensfeldt, A., Selwyn, N. Journal of Education Policy. Digital innovation and institutional entrepreneurship: Chief Digital Officer perspectives of their emerging role. Tumbas, S., Berente, N., vom Brocke, J. Journal of Information Technology	2018	differentiating teacher subjectivities and encouraging teacher entrepreneurship. CDOs can carve out a space in organisations with well established, institutional orders for their innovative trajectories.	Scandinavian educational technology show. Exploratory study – 35 primary interviews with CDOs.	Digital innovation, institutional entrepreneurship, institutional logic.	better acknowledge the struggles of technology use in schools. The study does not elaborate on how the CIO (Chief Information Officer) and other areas of an organisation would deal with digital initiatives
18	Transformation of the role of a man in the system of entrepreneurship in the process of digitalization of the Russian economy. Ragulina, J.V., Suglobov, A.E., Melnik, M.V. Quality - Access to Success	2018	Human resources become a source of intellectual activity associated with the introduction of digital technologies into business processes leading to innovations.	Regression and correlation analysis of modern employees in Russian economy.	Entrepreneurship, digital technologies, digitization of economy.	The finding arguably only relevant to the Russian context.
19	Digital technologies as external enablers of new venture creation in the IT hardware sector. Von Briel, F., Davidsson, P., Recker, J. Entrepreneurship: Theory and Practice	2018	Theoretical tools that analyse how digital technologies enable new venture creation.	Theory development	Digital technologies, IT, venture creation.	Empirical evidence and conceptual extensions along the same path is required to validate these tools.
20	Features of the entrepreneurship development in digital economy. Gontareva, I., Chorna, M., Pawliszczy, D., Barna, M., Dorokhov, O., Osinska, O. TEM Journal	2018	Digital system needs to take into account futures and financial options in assessing the information efficiency of markets.	Quantitative	Entrepreneurship, development, digital economy	Multi-layer business networks is required to better structure the conceptual model
21	The classroom of the future: Disrupting the concept of contemporary business education. Tarabasz, A., Selaković, M., Abraham, C. Entrepreneurial Business and Economics Review.	2018	Immersive interaction with AI allowing students to attain new skills for entrepreneurship practice.	Literature review	Digitization,	The selection of SP Jain School of Global Management as the case study had a purposive nature therefore certain statements may be biased.
22	Innovation in the government-run Continuing Vocational Education and Training programme for unemployed in Catalonia (Spain): Challenges and opportunities. Mara, L.C. Intangible Capital.	2018	Pedagogical innovation is related to the detection innovation including the curriculum of the centre whereas technological innovation is related to the use of the latest equipment in the market.	Qualitative study carried out using the insight from CIFO in Spain	Innovation, vocational education, digital technology	The finding arguably only relevant to the specific of Spain.
23	China's manufacturing locus in 2025: With a comparison of "Made-in-China 2025" and "Industry 4.0". Li, L. Technological Forecasting and Social Change.	2018	Enhancing manufacturing capability, R&D, and human capital provided China with a head start to transform 'Made in China 2025' plan into action.	Secondary research using industrial data.	Emerging economy, Internet of Things, Human capital	Difficult to understand the managerial implications and strategic advantages of collaborative activity.
24	Social entrepreneurship through digital communication in farming. Ratten, V. World Journal of	2018	Digital social farm entrepreneurship can be categorised into social bricoleurs, social constructionists, and social engineers.	In-depth interview with 15 Australian farmers	Entrepreneurship, social responsibility,	The finding arguably only relevant to the specific of Australia.

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
25	Entrepreneurship, Management and Sustainable Development. Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship. Nambisan, S. Entrepreneurship Theory and Practice.	2017	Digitization of entrepreneurial initiatives implies (1) more fluid entrepreneurial processes and outcomes and (2) less predefined and more distributed entrepreneurial agency	A proposed research agenda in digital entrepreneurship.	Digital technologies, entrepreneurship, digital entrepreneurship	These assumptions demand novel theorizing in entrepreneurship that would benefit from the careful incorporation of digital technology-related theoretical perspectives, concepts, and constructs.
26	Digital Technology Entrepreneurship: A Definition and Research Agenda. Giones, F., Brem, A. Technology Innovation Management Review.	2017	The digital transformation of most of the input technologies that entrepreneurs use to propose their new innovative ventures has extended the types of technology entrepreneurs we can observe.	A research agenda	Technology entrepreneurship, digital technology entrepreneurship, digital entrepreneurship	The agenda can be achieved by exploring technology entrepreneurship considering the different shapes and forms triggered by digital technology
27	Making Sense of Africa's Emerging Digital Transformation and its Many Futures. Ndemo, B., Weiss, T. Africa Journal of Management.	2017	The transformative power of the digital agenda is in part contingent on the actions that alter cultural environments and thus unlock new location specific imaginations of how digital technologies can help development.	An observation of Africa's digital transformation	Digital transformation, development, entrepreneurship, socio-economic development	The information of ongoing change processes should be included to help answer why some changes continue to remain unrealised.
28	Digital technologies and rural women's entrepreneurship. Sánchez-Oro Sánchez M., Fernández Sánchez M.R. Prisma Social.	2017	The scarce use that rural women make of technologies for employment and entrepreneurship is linked to the limited or no support from their partner and other family members.	Empirical research about employment and entrepreneurship based on 400 samples of women living in municipality in Extremadura (Spain)	Rural entrepreneurship, ICT, employment	The finding arguably only relevant to the specific of Extremadura.
29	'Hustler lives' and digital dilemmas in Kenya: Young men negotiating work opportunities, life aspirations and mobile phone use. Tufte, T. Journal of African Media Studies	2017	The study shows young men in Kenya uses media as their aspirations for a good life and to negotiate work opportunities.	Ethnographic case study	Entrepreneurship, mobile phones, digital technology	The finding arguably only relevant to the specific of Kenya.
30	'Digital tech' and the public sector: what new role after public funding? Cooke, P. European Planning Studies.	2017	Entrepreneurship is fundamentally competitive, individualistic, and non-solidaristic whereas open innovation was born from open science.	A reflection upon the changing role of the public sector in an era of digital technology, social media, and Big Data.	Innovation systems, entrepreneurial ecosystem, digital technology	The finding could have been enhanced by including other cases from outside US/EU/UK.
31	What I am Versus What I do: Work and identity negotiation in hyperlocal news start-ups. Chadha, M. Journalism Practice	2016	Upon exploring work role transition and professional identity negotiation, journalists create holistic identities that are more reflective of their new roles.	Semi structure in-depth interviews	Entrepreneurship, entrepreneurial journalism,	The findings are not generalisable. Further study is required to get a clearer picture of how hyperlocal media entrepreneurs without prior professional experience make sense of the work they do. Rather descriptive.
32	Adapting to fast-changing markets and technologies. Day, G.S., Schoemaker, P. J.H.	2016	The contingent nature of dynamic capabilities as well as the crucial role of leaders both merit greater attention in how	Case studies of DuPont and Novartis's rapid deployment of digital technologies in marketing	Innovation, Entrepreneurship,	

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
	California Management Review		organisations should adapt when facing uncertain future.			
33	Algorithmic labor and information asymmetries: A case study of Uber's drivers. Rosenblat, A., Stark, L. International Journal of Communication.	2016	Greater attention to the role of platform disintermediation is required in shaping power relations and communications between employers and workers.	Real time analysis of posts by Uber drivers in online forums between 2014/15	Entrepreneurship, sharing economy,	The finding could have been enhanced by including the perspective of Uber's drivers
34	Italian Craft Firms Between Digital Manufacturing Open Innovation and servitization. Bonfanti, A, Del Giudice, M., Papa, A. Journal Knowledge Economy.	2015	Mixing ancient and digital knowledge in an open context of collaboration will allow craft entrepreneurs to positively look to the future.	Qualitative explorative analysis of Italian craft firms	Competitiveness, digital technologies, entrepreneurship	The finding only relevant to the specifics of Italian craft firms
35	The speed and extent of new venture internationalisation in the emerging economy context. Kazlauskaitė, R., Autio, E., Šarapovas, T., Abramavičius, Š., Gelbūda, M. Entrepreneurial Business and Economics Review.	2015	In contrast to firms from advanced economies, internationalisation of NV from emerging economies (EE) is mainly driven by push factors related to their domestic markets. Transportation, communication, and digital technology play a less relevant.	Systematic literature review developed on the basis of peer reviewed journal articles on NV internationalisation in emerging economies.	Entrepreneurship, international new venture (NV)	The study doesn't take into account as to what extent other theoretical logics contribute to its explication.
36	Entrepreneurship research (1985–2009) and the emergence of opportunities. Busenitz, L. W., Plummer, L. A., Klotz, A. C., Shahzad, A., Rhoads, K. ET & P	2014	Entrepreneurship articles now have a significant presence in the mainline “A” journals. This presence also signals legitimacy and a growing exchange among researcher studying entrepreneurship.	A bibliometric study involving new data from the 2000–2009 era building on 1985–1999 data to study entrepreneurship research published in the major journals.	Entrepreneurship, management,	Perhaps useful to include publication from entrepreneurship journals as well.
37	The liminality of trajectory shifts in institutional entrepreneurship. Henfridsson, O., Yoo, Y. Organization Science.	2014	Technology is inseparable from institutional entrepreneurship. Scholars in institutional entrepreneurship can gain greater insight by considering the role of technology in shaping innovations.	A nine-year case study at CarCorp a small European automaker founded in 1937.	New innovation, institutional entrepreneurship, liminality.	The finding arguably only relevant to the specifics of CarCorp.
38	Internationalization of Service Firms through Social Entrepreneurship and Networking. Ghauri, P., Tasavori, M., Zaefarian, R. International Marketing Review	2014	By engaging in social entrepreneurship, MNCs have focused on the neglected needs of the BOP population, developed sustainable solutions. Started with social value creation and postponed profits. The pursuit of social entrepreneurship has paved the way for them to establish relationship with NGOs.	An exploratory approach employing qualitative multiple case studies. Three services firms that have targeted the BOP markets in India were studied. In total, 25 in-depth interviews were conducted with MNC and their NGO partners.	Social entrepreneurship, internationalisation, base of the pyramid.	(1) The findings of this research are based on the BoP markets in India and are limited in their generalisability to other BoP markets. (2) More systematic studies could be conducted to provide more generalisable insights.
39	Organizational Learning, Innovation, and Internationalization: A Complex System Model Chiva, R., Ghauri, P., Alegre, J. British Journal of Management	2014	Different paces brought the systems to two different modes: the incremental complex adaptative system model and the global complex generative system model.	Qualitative methodology. Case studies of two clothing sector firms.	Innovation, organisational learning and internationalisation	The element of dynamic capability wasn't included in the study and could be useful to explore the application of this finding in other industries and countries.

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
40	Involving the Entrepreneurial Role Model – A Possible Development for Entrepreneurship Education. Rahman H & Day J. Journal of Entrepreneurship Education.	2014	The paper argues that while the concept of ‘business mother and father’ can be implemented successfully it is critical that appropriate institutional setting alongside the infrastructure is ready to support it.	An observation of higher education institutions in Indonesia.	Institutional theory, entrepreneurship, entrepreneurship education	The finding arguably only relevant in the Indonesian context.
41	Seeing around corners: How creativity skills in entrepreneurship education influence innovation in business. Gundry, L. K., Ofstein, L. F., Kickul, J. R. International Journal of Management Education.	2014	Pedagogical approaches play an important role in students’ creativity leading to a positive impact on perceptions of team support for innovation.	Survey-based research on entrepreneurship programme at Midwestern university (US).	Innovation, Entrepreneurship, Curriculum	No control variables were gathered regarding gender, country of origin or years of professional work experience.
42	Cloud computing: A social cognitive perspective of ethics, entrepreneurship, technology marketing, computer self-efficacy and outcome expectancy on behavioural intentions. Ratten, V. Australasian Marketing Journal.	2013	Social cognitive theory can help to understand the main internal and external drivers of increasing an individual’s intention to adopt cloud computing as learning instrument led to innovation.	Mixed methods	Entrepreneurship, Digital technology, higher education	The finding arguably only relevant to the specifics of Australia.
43	Inclusive Innovation: An Architecture for policy development. Chataway, J., Hanlin, R., Kaplinsky, R. Innovation, Knowledge, and Development.	2013	An increasing number of private sector actors are targeting inclusive innovation as sources of sales and profit.	Case study	Inclusive innovation, grassroots innovation,	A stronger evidence base is required for private and public actors to promote inclusive innovation effectively.
44	A Competency-Based Perspective on Entrepreneurship Education: Conceptual and Empirical Insights. Morris, H. M., Webb, J. W., Singhal, S. Journal of Small Business Management.	2013	Scholars can provide students with the appropriate scripts that can serve as the foundation for the development of these competencies and subsequently draw upon the measurement tools to determine teaching effectiveness.	Delphi methodology involving international students in South Africa.	Entrepreneurship,	Participants might have overlooked key entrepreneurial competencies that would have been identified if employing other theories.
45	Foreign direct investment spillover effects in China: Are they different across industries with different technological levels? Jeon, Y., Park, B. I., Ghauri, P. N. China Economic Review.	2013	Foreign investments in the same industry are more likely to engender negative influence on the local Chinese firms. These negative horizontal effects are particularly prominent in low technology sectors.	A vast firm-level panel dataset to examine horizontal and vertical effects of FDI.	FDI, entrepreneurship, technology	The result reveals that the overall effects of horizontal investments are negative however there are some exceptional sectors that the authors are unable to point out.
46	Building international entrepreneurial virtual networks in cyberspace. Sigfusson, T., Chetty, S. Journal of World Business	2013	Entrepreneurs with the largest networks use the online social network to demonstrate their network strength and to identify opportunities to bridge relationships.	Participant observation on LinkedIn and open-ended face to face interviews.	International entrepreneurship, resource-based view, network.	The study focus solely on software firms, could be enhanced by conducting in other industry to make analytical generalisation.
47	Relational and institutional embeddedness of Web-enabled entrepreneurial networks: Case studies of entrepreneurs in China. Avgerou, C., Li, B. Information Systems Journal.	2013	Economic activity on Web platform is embedded in a mix of virtual and community-based relations that are shaped by and alter the behavioural norms of a local culture. It also points to the government	Two case studies of Taobao Web platform in China.	Institutional theory, social embeddedness, entrepreneurship.	The research did not address the question of whether and under what conditions the networks of entrepreneurs are sustainable or may grow.

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
			and the Web service provider as important actors enabling the creation of entrepreneurial networks.			
48	Digital business strategy: toward a next generation of insights. Bharadwaj, A., El Sawy, O., Pavlou, P., Venkatraman, N. Journal MIS Quarterly	2013	In the digital business, speed recognises the importance of network; speed of coordination of product launches with others in the ecosystem that complement the value of products as well as dynamic adjustment to partners.	Conceptual using observation theory.	Digital business strategy, value creation	A more refined and detailed understanding of digital resources and their role in impacting value creation would have been useful. Also the distribution of value among partner firms in the industry ecosystem.
49	Entrepreneurship as a solution to poverty. Bruton, G. D., Ketchen, D., J., Ireland, R. D. Journal of Business Venturing	2013	Poverty is a critical issue for the world with the number of people living at the base of the pyramid declining only slightly over time. Entrepreneurship offers the best opportunity to create substantial and positive change within poverty settings.	Conceptual proposing a research agenda	Base of the pyramid, entrepreneurship, management.	The finding could have been enhanced through vibrant research concerning how entrepreneurs in poverty settings can create positive change.
50	Creating value through business model innovation. Amit, R., Zott, C. MIT Slone Management Review.	2012	The linkages among content creators, including authors, editors, other publishing professionals and distributors, constitute the heart of the new business model.	Management review of 190 entrepreneurial companies listed on US and European public exchanges between 1996 and 2000.	Value creation, innovation, governance	The finding arguably only relevant to the specifics of US and European markets.
51	Indigenous and foreign innovation efforts and drivers of technological upgrading: evidence from China. Fu, X., Gong, Y. World Development.	2011	Collective indigenous R&D activities at the industry level are found to be the major driver of technology upgrading of indigenous firms that push out the technology frontier.	Using a Chinese firm-level panel datasets covering 2001–2005, the paper decomposes productivity growth into technical change and efficiency improvement.	Innovation, technology transfer, upgrading.	The finding arguably only relevant to the specific of China.
52	The role of foreign technology and indigenous innovation in the emerging economies: technological change and catching-up. Fu, X., Pietrobelli, C., Soete, L. IDB	2011	Despite the potential offered by globalisation and a liberal trade regime, the benefits of international technology diffusion can only be delivered with parallel indigenous innovation efforts and the presence of modern institutional and governance structures.	In-depth exploration of Northern technology for countries in the developing South.	Innovation, technology transfer, emerging economies	The finding could have been enhanced once technology research concerning FDI supported by firm participants in the Global South.
53	Exploration of process and competitive factors of entrepreneurship in digital space: A multiple case study in Iran. Hafezieh, N., Akhavan, P., Eshraghian, F. Education, Business and Society: Contemporary Middle Eastern Issues	2011	Unlike the traditional forms of entrepreneurship, the entrepreneurs in cyber space in Iran did not examine the feasibility of their projects, also the identification of a business opportunity created business ideas.	Literature review	Digital technology, competitiveness, entrepreneurialism.	Given that researchers in Iran have not studied digital entrepreneurship and, there is a great interest in digital entrepreneurship, further research is needed on this subject.
54	Dial "A" for agriculture: a review of information and communication technologies for agricultural extension in	2011	The growth of ICT in developing countries offers a new technology and new opportunities for	Quantitative study using Survey.	Technology adoption, ICT, Agriculture.	To measure the impact of such services on farmers' knowledge, adoption and welfare, as well as their cost-

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No	Title/author/journal	Year	Key findings	Method used	Theory used	Limitations
55	developing countries. Aker, J. C. Agricultural Economics International entrepreneurship in internet-enabled markets. Reuber, A. R., Fischer, E. Journal of Business Venturing.	2011	accessing information in poorer countries. The findings propose a model of the firm-specific resources associated with internet-enabled markets that are expected to be related to a firm's successful pursuit of internationalisation.	Examination of 33 published articles over more than 10 years, from 2000 to 2010.	International entrepreneurship, internet, reputation.	effectiveness, rigorous impact and evaluation is needed. Some propositions are provided that can be tested empirically in future research.
56	Learning through International Acquisitions: The Process of Knowledge Acquisition in China. Zou and Ghauri, P. Management International review	2008	Foreign firms were devoted to acquiring knowledge around local market and local network as knowledge-based resources and transferring them to local/global operations.	An explorative case study method using semi structured interviews	Knowledge transfer, process perspective, acquisition.	The lack of generalisability of the case studies as well as the lack of depth in the information due to delicate circumstances.
57	The economic lives of the poor. Banerjee, A. V., Duflo, E. The journal of economic perspectives.	2007	Most low-income countries have made some attempt to ensure that poor households have access to primary schools and basic health centres.	Quantitative based on household surveys conducted in 13 countries.	Poverty alleviation,	Limited clear findings and generalisability.
58	Value creation in e-business. Amit, R., Zott, C. Strategic Management Journal.	2001	A firm's business model is an important locus of innovation and a crucial source of value creation for the firm and its suppliers, partners, and customers.	Data obtained from case study analysis to develop a model of the sources of value creation.	Value creation, e-business, business model.	The study will benefit from an integrative approach that combines both strategy and entrepreneurship perspectives.
59	Information technology in business processes. Chan, S. L. Business Process Management Journal.	2000	Human elements play a major role in organisational operations, including the effective and efficient deployment of IT.	Qualitative observations	Technology, IT,	Conceptual. Careful process innovation for proven technologies that could be implemented in this framework.
60	Exploring alternative approaches in high level entrepreneurship education: creating micro-mechanisms for endogenous regional growth. Laukkanen, M. Entrepreneurship & Regional Development	2000	A university can be conceptualised as a societal innovation system (entrepreneurial education) embedded in a system as a task of producing entrepreneurs (individuals) and facilitating social mechanism for business to grow.	Qualitative observations	Entrepreneurship, new venture, educational development	A more longitudinal research is needed to corroborate the links of entrepreneurial MBA programmes and NV performance.

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