Abstract

Start-ups are entrepreneurial ventures, having a high risk of failure (Bortolini et al., 2018; Spender et al., 2017). The risk of failures of Start-ups can be minimized if they are characterized well, and the appropriate macro- and micro-level policy interventions can be introduced. Our literature review (LR) on Start-ups reveals that they are addressed by different names, namely, Hi-Tech firms, University spin-offs, Innovative Start-ups (ISs), Lean Start-ups, Silicon Valley Start-ups and New Technology-Based Firms (NTBF). (Tripathi, Seppanen et al., 2018; Silva et al., 2020; Wiesenberg et al., 2020). It is also observed that Start-ups are referred to as small business and Micro, Small and Medium Enterprises (MSMEs). A systematic literature review (SLR) of Start-ups is presented here and used as the basis for characterizing them. We propose (proposition-1) that these Start-up firms, addressed by different names, as referred above, can be grouped, characterized and identified as ISs.

Based on a robust characterization of ISs, this article proposes that ISs are a subset of MSMEs. From a comparative study of ISs and MSME, we propose (proposition-2) a framework that shows MSMEs can be conceptually split into ISs and Conventional MSMEs (C-MSMEs), with an intersection between ISs and C-MSME. This study has also identified four new research areas related to Start-ups and MSMEs. The above characterization and differentiation of ISs from other entrepreneurial ventures will help policymakers, entrepreneurs, and investors to understand ISs and C-MSMEs better and develop suitable policy interventions and risk mitigation strategies.
Keywords
Entrepreneurship, micro, small and medium enterprises (MSME), innovative start-ups, systematic literature review (SLR)

Introduction

Start-ups have been studied by many researchers across different countries and in different business and market contexts because of the very high potential economic and social value they hold for those countries and contexts (Hillemane et al., 2019; Ojaghi et al., 2019; Pugliese et al., 2016; Tripathi, Seppanen et al., 2018). Yet, there are no accepted definitions of Start-ups (Bortolini et al., 2018; Spender et al., 2017; Zaech & Baldegger, 2017). Some authors refer to the term ‘Start-up’ as connoting the first/initial phase of operation of any enterprise (Gartner et al., 2010; Zaech & Baldegger, 2017), while some refer to it as any small innovative firm1 (Blank, 2013; Ries, 2011; Sauermann, 2017). These small innovative firms are also indicated by different names in the literature (see Table 1). The challenge is to establish if these different names mean the same type of firms ontologically. We have attempted to study the underlying character of all these firms and determine if they can and should be distinguished from other business ventures in order for them to be treated distinctly by policymakers.

Interestingly, practicing entrepreneurs use the word Start-ups and Micro, Small and Medium Enterprises (MSMEs2) interchangeably. The views of some MSME founders are, ‘Is there a need to differentiate and have clarity between MSMEs, Small businesses, Family businesses and Start-ups? Aren’t all of them business firms?’ We also observed that many Start-ups operating from incubation centres are registered as both MSME and Start-up with the Government. Even in academics, there are divergent views on Start-ups and MSMEs. There are research papers that state that Start-ups and MSMEs are similar types of firms (Silva et al., 2020; Wiesenberg et al., 2020). Several LRs papers on MSME/SME are considering Start-ups to be a part of MSMEs (Demartini & Beretta, 2019; Hossain & Kauranen, 2016; Nolan & Garavan, 2016). However, few papers on Start-ups highlight that Start-ups and MSMEs are different types of firms (Ojaghi et al., 2019; Pahnke & Welter, 2019).

A review of literature on specific aspects of Start-ups, such as Innovation (Spender et al., 2017), Start-up ecosystem (Ojaghi et al., 2019), Lean Start-up methodologies (Silva et al., 2020), growth of Start-ups (Pugliese et al., 2016), and Dynamic Capacities of Start-ups (Hanchi & Kerzazi, 2020), has provided us with a comprehensive view on Start-ups. Interestingly, all these LR papers have addressed these Start-ups by different names (see Table 1). However, there are no papers that have attempted to consolidate and characterise all these types of Start-ups. Based on this literature study, the following questions arise: (a) To what extent are Start-ups (referred by different names) similar or different types of entrepreneurial ventures? (b) Can all these ventures be holistically grouped and characterized? (c) What are the unique characteristics of Start-ups? and (d) What is the conceptual association/relationship between Start-ups and MSMEs?
Table 1. Start-ups Referred by Different Names in Literature Along with Their Reference

| Sr. No. | Popular Names for Start-ups                              | Paper Number (Refer Table 3) |
|---------|----------------------------------------------------------|------------------------------|
| 1       | Academic spin-offs                                       | 13                           |
| 2       | Digital Start-up                                         | 5                            |
| 3       | Early stage company                                      | 8                            |
| 4       | EI (e-Innovation) start-ups                              | 7                            |
| 5       | Fast-growing start-ups                                   | 14                           |
| 6       | Hardware start-up                                        | 10                           |
| 7       | High-tech start-ups                                      | 6                            |
| 8       | High-technology businesses                               | 13                           |
| 9       | High-technology firms                                    | 14                           |
| 10      | Hi-tech firm                                             | 3                            |
| 11      | Innovative firms                                         | 4                            |
| 12      | Innovative start-ups                                     | 2, 6                         |
| 13      | Internet-based start-ups                                 | 14                           |
| 14      | Internet business start-up                               | 15                           |
| 15      | Lean start-up                                            | 5, 9, 11                     |
| 16      | New spin-offs or spinouts                                | 13                           |
| 17      | New technology-based firms (NTBFs)                       | 13                           |
| 18      | Silicon Valley firms                                     | 13                           |
| 19      | Silicon Valley start-ups                                 | 2, 8                         |
| 20      | Small-scale technology-based start-ups                   | 11                           |
| 21      | Software start-up                                        | 8, 10                        |
| 22      | Tech start-up                                            | 4, 8                         |
| 23      | Technology new ventures                                  | 5                            |
| 24      | Technology-based start-ups                               | 11, 12                       |
| 25      | University spin-offs                                     | 13, 14                       |
| 26      | University technological spin-offs                       | 13                           |
| 27      | Corporate spin-offs                                      | 1                            |

Source: The authors.

The need for undertaking research on the above questions can be understood from the Context-Intervention-Mechanism-Outcome (CIMO) logic (Denyer et al., 2008). Accordingly, in this article, the Context (C) is Start-up firms, the Intervention (I) is Policy interventions, the Mechanism (M) is Characterization and the Outcome (O) is minimizing the risk of failure of Start-ups. Start-ups have a high failure rate of around 90 per cent (Kuester et al., 2018). At the same time, it is also well known that Start-ups facilitate wealth and job creation for any nation (Tripathi, Seppanen et al., 2018). It is, therefore, essential that Start-ups should be nurtured by supportive policies that will minimise their failure rates. For this, their fundamental characteristics must be well understood, and this article attempts to serve this cause.

We present a systematic literature review (SLR) of selected LR papers on Start-ups. A total of 15 peer-reviewed LR papers from top-rated journals, which have been rated by the Australian Business Deans Council (ABDC), and cover the fields of entrepreneurship, management, strategy, innovation, decision making,
small business, technology etc., are reviewed here. The Start-ups referred to by these papers (refer Table 1) have been grouped based on their common characteristics. There is a distinct common characteristics that have prompted the identification of the corresponding Start-ups as ISs. The findings on the characterization of Start-ups augment Schumpeter’s theory of ‘Innovative entrepreneurs’ by pointing to the founders/owners of ISs as Schumpeterian entrepreneurs.

We have subsequently contrasted these ISs with MSMEs. Since we found commonalities and differences between ISs and MSMEs, we have conceptually bifurcated MSMEs as Conventional MSMEs (C-MSMEs) and unconventional/innovative MSMEs (also termed as ISs). These ISs are characterized in the first part of this article. We have developed a framework to represent MSMEs as having two subsets, namely, ISs, and C-MSMEs. Two propositions are developed and discussed in this article. This article has also proposed four new areas for further research. The findings of this article will help policymakers to propose appropriate macro- and micro-level policy interventions towards risk management of Start-ups and MSMEs.

The structure of this article is as follows. First, the background literature on Start-ups is reviewed, and the need for characterization of Start-ups is established. The research methodology involving a SLR for characterization is then presented. The findings of the SLR are presented, followed by a discussion on the characterization of ISs. In the penultimate section, the contributions and limitations of this article are mentioned, along with suggestions for future work. Finally, the conclusions are presented.

**Background on Start-up Firms**

Egan-Wyer et al. (2017) observed that the term ‘Start-ups’ had been used from William Shakespeare’s era in ‘Much Ado About Nothing’. The authors have tracked the usage of this term from 1976, in a chronological form, through the first dot-com era (1997–2000), till the current times of the Internet economy, when it is very popular. Originally, the term Start-ups referred to a small entrepreneurial firm with limited capital. During the dot-com era, these firms were also referred to as Silicon Valley Start-up, and Hi-tech Start-up. Currently, the literature on Start-ups refers to them by different names, which are tabulated in Table 1. The authors of all these papers have defined the respective names. However, no paper seems to have brought out the commonality among all these firms, which are named differently. Literature reviews on Start-ups revealed that the term Start-ups and SME/MSME referred to (a) similar types of firms (Silva et al., 2020; Wiesenberg et al., 2020), or (b) different kinds of firms (Hanchi & Kerzazi, 2020; Ojaghi et al., 2019) and (c) in some places, they have been used interchangeably (Silva et al., 2020). There is also a need to investigate how Start-ups are conceptually co-located with MSMEs.

The conceptual relationships between Start-ups and MSMEs should be understood since these entrepreneurial ventures are known for creating wealth and accelerating the economic growth of their nations (Ojaghi et al., 2019). Yet, they
are known to have a very high rate of failure (Kuester et al., 2018). To mitigate and/or minimize their failure rates, effective policy interventions are essential. These can be formulated after undertaking a characterization study.

**Research Methodology**

As the primary purpose of this article is to characterise Start-ups, based on existing literature in this topic, we have decided to conduct a SLR, an evidence-informed pragmatic management research methodology (Denyer & Tranfield, 2009; Tranfield et al., 2003). When compared with traditional narrative LR techniques, SLR is reproducible, not biased, contains rigor and is thorough in its investigation (Tranfield et al., 2003). SLRs are tested for their (a) transparency (for being explicit, showing the link between the evidence and the reviewer’s conclusion and recommendation, and showing the assumptions on scope made by the reviewer), (b) inclusivity in data collection, (c) explanatory and (d) heuristic nature (Denyer & Tranfield, 2009). Further, SLRs provide insights and guidance for intervention into the operational needs of policymakers and practitioners. Thus, we decided to use SLR as our research methodology.

This methodology is undertaken in five steps: Step 1: Formulation of the research question, Step 2: Locating the study, Step 3: Study selection and evaluation, Step 4: Analysis and synthesis and Step 5: Reporting and using the results. Steps 1, 2 and 3 are undertaken in this section of the research methodology. Step 4 is undertaken in the next section on ‘Analysis and Synthesis’. Step 5 includes the report of our findings.

**Step 1: Formulation of the Research Question**

This has been largely covered in the introduction section, where the CIMO logic has been applied to evolve the design propositions. As per the CIMO logic, the Context (C) is Start-up firms, the Intervention (I) is Policy interventions, the Mechanism (M) is Characterization and the Outcome (O) is minimizing the risk of failure of Start-ups. With this CIMO logic, an exploratory scoping study was undertaken. This revealed that Start-up firms are referred to by different names (see Table 1). Therefore, research was deemed necessary to study if the characteristics of all these types of Start-ups are the same. Based on this, four research questions were evolved, and these are listed in the introduction section.

**Step 2: Locating the Study**

Based on the research questions identified, we consolidated all the peer-reviewed papers published on Start-ups. A quick run in electronic databases revealed that there are a few thousand papers on Start-ups. To get the essence of all these papers, we decided to examine selected LR on Start-ups. The selection process is
explained in Table 2. We reviewed Scopus’s electronic database using the software ‘Harzing’s Publish or Perish’. Since we wanted to focus only on peer-reviewed papers published by rated journals, we restricted our search to those journals rated as A*, A, B and C as per ABDC-2019 ratings. The search string used was “Start-up*” OR “Startup*” AND “Literature review” in the title, abstract or keywords. This search provided a total of 113 LR papers.

**Step 3: Study Selection and Evaluation**

To ensure that the selected papers address the research questions, the selection criteria for inclusion and exclusion were formulated and listed in Table 2. All the 113 papers were first scrutinized based on their title. In the next round, the abstracts of the papers were studied in detail. After this, the journal rating filter was applied (ABDC-2019 rating), and then the final list of 15 papers was identified. The list of these 15 literature reviews (LRs) papers, along with their details, is given in Table 3. Figure 1(a) shows the number of published papers along with the corresponding ABDC-2019 rating. The publication year and the corresponding number of papers are shown in Figure 1(b). Interestingly, all the papers have appeared in or after 2016, indicating their relative recency.

**Table 2. SLR Study Location, Selection and Evaluations of Papers**

| Search location       | Scopus database (Harzing’s Publish or Perish). |
|-----------------------|------------------------------------------------|
| Search time period    | Up to July 2020                                  |
| Search strings        | “Start-up*” AND “Literature review” = 58 papers  |
|                       | “Startup*” AND “Literature review” = 55 papers    |
|                       | Total papers = 113 papers                        |

**Inclusion criteria**

- **Language**: English
- **Document type**: Peer-reviewed journal having ABDC-2019 ranking of A*, A, B and C
- **Research focus**: Start-ups/Startups

**Exclusion criteria**

- **Research focus**
  1. Start-ups not as an entrepreneurial venture
  2. Start-ups are not a new venture, but the initial phase of any new business venture
  3. Having the term ‘literature review’ in the abstract, but the paper has not undertaken a systematic literature review or a narrative

| Shortlisted papers   | 113 Based on using two different search strings |
|----------------------|-----------------------------------------------|
| Excluded             | 98    Exclusion criteria, as mentioned above   |
| Shortlisted papers   | 15    These papers were used for the characterization of start-ups |

**Source**: The authors.
| Sr. No. | Reference | Title                                                                 | Journal                                      | Rating | Keywords                                                                 | No. of Papers | Research Methodology | Review Period                     | Search Strings Used                                                                 |
|--------|-----------|----------------------------------------------------------------------|----------------------------------------------|--------|-------------------------------------------------------------------------|---------------|---------------------|-----------------------------------|-------------------------------------------------------------------------------------|
| 1      | (Knight et al., 2020) | Start-up teams: A multidimensional conceptualisation, integrative review of past research and future research agenda. | *Academy of Management Annals* | A*     | Teams, Groups; Organizational Behavior; Entrepreneurship                 | 334           | SLR                 | Start to June 2018 (FT 50 journals) | start-up team, new venture team, nascent team, founding team, entrepreneurial team and pre-founding team |
| 2      | (Wiesenber et al., 2020) | Key challenges in strategic start-up communication: A systematic literature review and an explorative study. | *Journal of Communication Management* | B      | Strategic start-up communication; Start-up ecosystem; Start-up communication; Emergence; New Institutionalism | 70            | SLR and Survey (Explorative approach) |  | venture team, nascent team, founding team, entrepreneurial team and pre-founding team. Entrepreneur*, Start-up*, Startup*, SME; New Ventures; Small Enterprise*; Founder; Communication; PR; Public Relations; Marketing; Brand* |
| 3      | (Hanchi & Kerzai, 2020) | Startup innovation capability from a dynamic capability-based view: A literature review and conceptual framework. | *Journal of Small Business Strategy* | C      | Innovation capability; Dynamic capability; Startup; Entrepreneurship       | 125           | Semi-Structured Literature Review | 2001–2016 | “innovation” and “capability” in title, abstract and keywords: (innovat* OR “product development”) AND (capabilit* OR capacit* OR abilit* OR competenc*). (start*up, SME, “small business,” “new venture,” “young firm,” entrepreneur*) |
| Sr. No. | Reference            | Title                                                                 | Journal                                      | Rating | Keywords                          | No. of Papers Reviewed | Research Methodology | Review Period      | Search Strings Used                                                                 |
|-------|----------------------|----------------------------------------------------------------------|----------------------------------------------|--------|-----------------------------------|------------------------|----------------------|---------------------|-------------------------------------------------------------------------------------|
| 4     | (Hillemane et al., 2019) | Technology business incubation for start-up generation: A literature review toward a conceptual framework | *International Journal of Entrepreneurial Behaviour and Research* | B      | Start-ups; TBI s                  | 71                     | SLR                  | 1985–2018           | “technology incubator” or “business incubator” or “technology business incubation” or “science park” or “technology park” or “research park” or “technopole” or “business development center” or “technology development center” (“Agile” AND “develop*” AND (“entrepr*” OR “startup*” OR “SME*”)) (“Agile” AND “method*” (“Agile” AND “Management” (“Agile” AND “tool*” “Agile Management” “Customer Development” “Lean Startup” “Lean” AND “Startup*”)) |
| 5     | (Silva et al., 2020)  | Lean Startup, Agile Methodologies and Customer Development for business model innovation: A systematic review and research agenda | *International Journal of Entrepreneurial Behaviour and Research* | B      | Experimentation: New venture creation; Business model innovation; Technology entrepreneurship; Lean Startup approaches; Minimum viable product | 71                     | SLR                  | 1945–April 2019     | (“Agile” AND “develop*” (“Agile” AND “Management” (“Agile” AND “tool*” “Agile Management” “Customer Development” “Lean Startup” “Lean” AND “Startup*”)) |
|   | (Ojaghi et al., 2019) | A synthesized framework for the formation of startups’ innovation ecosystem: A systematic literature review | Journal of Science and Technology Policy Management | Systematic literature review; Startups; Ecosystemic approach; Formation Framework | 63 | SLR | 2008–2018 | Search terms: such as “innovation,” “startup,” “new venture,” “high growth,” “new entrepreneur,” and “emerging enterprise” Search string: TS=(“start-up*” OR startup OR “start up*”) AND innovat*) AND TI=(“start-up*” OR startup OR “start up*” OR “new ventur*” OR “new entrepreneur*” OR “nascent entrepreneur*” OR fast grow* OR fast-grow* OR incubator OR acceler* OR ecosystem) innovation, new product, new service, launch, commercialization |
|---|---|---|---|---|---|---|---|---|
| 7 | (Kuester et al., 2018) | Get the show on the road: Go-to-market strategies for e-innovations of start-ups | Journal of Business Research | Go-to-market strategy; E-innovation; Start-up; Signalling theory; Trust; Uncertainty | 131 | SLR + Expert interview | Up to and including 2015 Published in A and A* journals of ABDC | (Table 3 continued)
| Sr. No. | Reference | Title | Journal | Rating | Keywords | No. of Papers Reviewed | Research Methodology | Review Period | Search Strings Used |
|--------|-----------|-------|---------|--------|----------|-----------------------|---------------------|---------------|-------------------|
| 8      | (Tripathi, Seppanen et al., 2018) | Insights into startup ecosystems through exploration of multi-vocal literature | Information and Software Technology | A | Startup; Ecosystem; Startup ecosystem; Software startup; Multi-vocal literature review; Systematic literature review Startups; Historical review; Business model validation; Lean Startup; Learning School; Strategy; Effectuation | 63 | Multivocal Literature Review | | “startup” OR “start-up” OR “early-stage firm” OR “early stage firm” OR “early-stage company” OR “early stage company” Ecosystem |
| 9      | (Bortolini et al., 2018) | Lean Startup: a comprehensive historical review | Management Decision | B | Historical review; Business model validation; Lean Startup; Learning School; Strategy; Effectuation | 118 | Literature Review | Up to early 2018 | (startup OR “new venture” OR “new business”) AND “business model” AND (lean OR hypothesis OR experiment* OR test OR learn* |
| 10     | (Tripathi, Klotins et al., 2018) | An anatomy of requirements engineering in software startups using multi-vocal literature and case survey | Journal of Systems and Software | B | Requirements engineering; Software startups; Multi-vocal literature review; Case survey | 36 | Multivocal Literature Review and Survey | | “startup” OR “start-up” OR “early-stage firm” OR “early stage firm” OR “early-stage company” OR “early stage company” “requirement” OR “requirement engineering” OR “customer” OR “end user” OR “stakeholder” |
|   | (Hernandez et al., 2018) | Team collaboration capabilities as a factor in startup success | Journal of Technology Management and Innovation | 11  | Literature Review | 14  | 2000–2016 |
|---|--------------------------|------------------------------------------------------------|-------------------------------------------------|-----|------------------|-----|-----------|
|   | (Eveleens et al., 2017)  | How network-based incubation helps start-up performance: a systematic review against the background of management theories | Journal of Technology Transfer | 12  | SLR              | 50  | Up to April 2015 |

Table 3 continued
| Sr. No. | Reference                        | Title                                                                 | Journal                               | Rating | Keywords                                                                 | No. of Papers Reviewed | Research Methodology | Review Period       | Search Strings Used                                                                 |
|--------|----------------------------------|----------------------------------------------------------------------|---------------------------------------|--------|---------------------------------------------------------------------------|------------------------|----------------------|---------------------|-------------------------------------------------------------------------------------|
| 13     | (Spender et al., 2017)           | Startups and open innovation: a review of the literature              | European Journal of Innovation        | C      | Literature Review; Open Innovation; Startup                                | 41                     | Literature Review    | 2003–2015 (FT 50 journals) | ["start up"] OR ["new venture"] AND ["open innovat"] OR ["network innovat"] OR ["distributed innovat"] |
| 14     | (Pugliese et al., 2016)          | Putting process on track: empirical research on start-ups' growth drivers | Management Decision                  | B      | Literature Review; Start-ups; Firm Growth; High-Growth firms; Process view | 233                    | SLR                  |                     | start-up, new venture, new business, new firm or new organization, combined with the terms growth, success, performance, survival or failure |
| 15     | (Wang et al., 2016)              | A service innovation framework for start-up firms by integrating service experience engineering approach and capability maturity model | Service Business                     | B      | Capability maturity model; Service experience engineering; Service innovation; Start-up firm | 1751                   | SLR and Case study  | 1995–2014           | “service innovation,” “service experience engineering,” “maturity model” contained in the title, abstract, keywords, or Citation |

*Source:* The authors.
Step 4: Analysis and Synthesis

In this step, we first analyse the selected papers and then separately synthesise them. During analysis, the information from each paper is broken down into its constituent parts using a coding technique (Saldana, 2013). These are grouped into categories based on similarities. In this article, we have used the keywords of the 15 LR papers to group the information (see the ‘Analysis and Synthesis’ section). During synthesis, the obtained data are combined to extract shared themes, which are detailed in the next section.

Step 5: Reporting and Using the Results

The results of the SLR are used to address the research questions, which we have stated in the Introduction section. Further, we have been able to put forth a couple
of propositions based on our synthesis of existing knowledge in this field. We have been able to characterise Start-ups and develop a framework to distinguish them from MSMEs, as amplified in the discussions section.

**Analysis and Synthesis**

The 15 LR papers listed in Table 3 were analysed. Column 7 in Table 3 indicates the number of papers each of these 15 LR papers has reviewed. The union of all these resulted in 3171 papers, including those that would have been cited by two or more among the 15 LR papers. We can note that by undertaking this SLR of these 15 LR papers, we are indirectly reviewing a large number of papers on Start-ups. Table 3 shows the review period for these 15 LR papers; readers can appreciate the time domain of each review. It also indicates the search strings and the Research Methodology used by various authors, a majority of whom have used SLR. In addition to the LR, some authors have also conducted a survey or expert interviews or case study. These 15 LR papers are published in 13 different journals that focus on entrepreneurship, small businesses, management, strategy, innovation, technology etc. All the keywords indicated by the respective authors are listed in Table 3. There is a total of 72 keywords, of which the keyword Startup/Start-up is used nine times, as the most commonly used keyword.

For analysing the information/content in these 15 LR papers, we split the data available into various constituent parts. For this, we used a coding technique, as proposed by Saldana (2013). In the first cycle of coding, we used elemental coding known as initial/open coding, and in the second cycle, we used pattern coding. For the first cycle of coding, we considered the keywords used in these 15 LR papers, observing that these keywords would represent the concepts and findings of the respective papers. All the 72 keywords (which we are calling as sub-codes) were grouped based on their similarities. These 72 keywords were grouped under 26 codes, and these were further grouped into three categories, as represented in Table 4, which shows code counts in their decreasing order of frequency. Grouping similar sub-codes led to the development of the codes. For example, the following five keywords, ‘Business Model Innovation’, ‘E-innovation’, ‘Open Innovation’, ‘Innovation capability’ and ‘Service Innovation’ have been grouped and given a code ‘Innovation’. The 26 codes were grouped under three categories, which are Firm name, Research methodology and Start-up character. All the codes referring to different names of Start-ups, such as Lean Start-ups, Software Start-ups, High growth Start-ups and NTBF, were grouped under the theme ‘Firm name’. Similarly, all the codes used for the characterization of Start-ups are grouped under the theme ‘Character’. The first author of this article undertook the coding. This was reviewed by an independent reviewer. Subsequently, the codes were fine-tuned. Finally, the second author of this article examined the appropriateness of these codes and categories. This was done to minimize bias in the process of coding. MS-Excel tables were used to group the keywords/sub-codes into codes and categories.
| Sr. No. | Grouping of Keywords/Sub-codes | Codes | Code Count | Category |
|---------|--------------------------------|-------|------------|----------|
| 1       | Start-ups, Startup, Start-up firm | Start-ups | 9          | Firm Name |
| 2       | Systematic literature review, Case survey, Multi-vocal literature review, Historical review, Literature Review | Research tool | 8          | Research Methodology |
| 3       | Innovation capability, Business Model Innovation, E-innovation, Open Innovation, Service Innovation | Innovation | 5          | Character |
| 4       | Dynamic Capability, Performance, Dynamic capabilities, Collaboration, Capability building | Dynamic Capability | 5          | Character |
| 5       | Organization behaviour; Teams; Team collaboration capabilities, Groups | Organizational behaviour | 4          | Character |
| 6       | Start-up ecosystem, Ecosystem, Ecosystemic approach, Start-up ecosystem | Start-up ecosystem | 4          | Character |
| 7       | Strategy, Learning School, Lean Startup approaches, Go-to-market strategy | Business Strategy | 4          | Character |
| 8       | New Institutionalism, Formation framework, Emergence, New venture creation | New Business Venture | 4          | Character |
| 9       | Start-up communication, Signalling theory, Strategic start-up communication | Communication | 3          | Character |
| 10      | Entrepreneurship | Entrepreneurship | 2          | Character |
| 11      | Incubation, TBI | Incubator | 2          | Character |
| 12      | Minimum Viable Product, Experimentation | MVP | 2          | Character |
| 13      | Network, Social capital | Social capital | 2          | Character |
| 14      | Requirements engineering, Trust | Customer requirement | 2          | Character |
| 15      | Software start-up, Software start-ups | Software start-up | 2          | Firm Name |
| 16      | Technology-based Start-ups, Technology-based Start-up team | NTBF | 2          | Firm Name |
| 17      | Resources, Effectuation | Resources | 2          | Character |
| 18      | Capability maturity model, Service experience engineering | New Service/Product | 2          | Character |
| 19      | Lean Start-up | Lean Start-up | 1          | Firm Name |
| 20      | Process view | Organization Process | 1          | Character |
| 21      | Business model validation | Business Model | 1          | Character |

(Table 4 continued)
| Sr. No. | Grouping of Keywords/Sub-codes             | Codes          | Code Count | Category     |
|--------|-------------------------------------------|----------------|------------|--------------|
| 22     | Entrepreneurs                             | Entrepreneur   | 1          | Character    |
| 23     | High-Growth firms                         | Hi-Growth Firm | 1          | Firm Name    |
| 24     | Firm Growth                               | High-Growth    | 1          | Character    |
| 25     | Technology entrepreneurship               | Technology     | 1          | Character    |
| 26     | Uncertainty                               | Uncertainty    | 1          | Character    |
|        | Total Keywords                            |                | 72         |              |

Source: The authors.
The codes grouped under the category ‘Character’ are of interest since we are attempting to characterize Start-ups by using these 20 codes. All the 15 LR papers were completely read, understood and the Start-up characteristics identified in each paper were grouped under these 20 codes. During this process of breaking down the data from each of these 15 LR papers into these 20 codes, we realized that we needed to add three more codes. These three codes are Funding, Failure and National Value. Thus, we had 23 codes, and we analysed the 15 LR papers using a $23 \times 15$ matrix in a spreadsheet, with each column indicating one of the character codes and each row representing one of the 15 LR papers. Each LR paper was read in its PDF format. The text related to each character, when identified, was lifted and filled in the spreadsheet. In the second round of paper review, we used the ‘find’ function in the PDF files to reconfirm that all the characters mentioned in these articles are included in our study.

The synthesis work commenced after the above analysis was completed for all the 15 LR papers. During synthesis, the contents of the $23 \times 15$ matrix, representing 23 codes from 15 LR papers, were reviewed in a tabular form using a spreadsheet. The information in this tabular form was used to evolve the common and fundamental characteristics of Start-ups in the discussions section.

**Discussions on the Characterization of Start-ups**

In this section, we discuss the findings of the SLR and thereby address the research questions. We first address research questions (i), (ii) and (iii) together, as they are similar, and then address the question (iv) separately.

**Question (i):** To what extent are Start-ups (referred to by different names) similar or different types of entrepreneurial ventures?

**Question (ii):** Can all these ventures be holistically grouped and characterized?

**Question (iii):** What are the unique characteristics of Start-ups?

The outcome of the analysis (refer section above), towards the characterization of Start-ups, resulted in a $23 \times 15$ matrix table. A review of this $23 \times 15$ matrix table reveals that for each character code, there is a similarity in the views expressed by the authors of the 15 different LR papers. It is pertinent to mention that the ideas emerging from these 15 papers are the consolidated views of few thousands of individual papers. We have attempted to extract the typical characteristics from these 15 LR papers for each of the 23 codes, using the second cycle pattern coding (Saldana, 2013), and the same is presented below. We have been parsimonious in describing each character. The typical characteristics of Start-ups under each of these 23 different character codes (highlighted in italics) are as follows:

1. Start-ups are new and small *entrepreneurial* ventures operating in an innovative ecosystem, which aims to exploit the opportunity and disrupt the traditional pattern.

2. Start-ups transform novel ideas into *innovative* new products/services and use innovation to overcome the liabilities of smallness and newness.
3. Start-ups are inexperienced new firms associated with uncertainty, and they could be a temporary organization also.

4. Start-ups attempt to discover the latent/unspecified needs of customers and create value for them by attempting to use the lean methodology of agile and customer development.

5. Start-ups creatively produce new innovative products/services by making a prototype and then testing it; they are not averse to pivot, based on constant customer feedback.

6. Start-ups build a minimum viable product (MVP) and get the same tested through selected customers so as to understand their requirements.

7. Start-ups are small, flat, agile, dynamic and less formal organizations, and they employ creative, adventurous and enthusiastic human minds.

8. Start-ups are highly owner-centric; their entrepreneurial team (founders) have ownership in the equity and autonomy in strategic decision making, and this team is mainly responsible for the success/failure and growth of the venture.

9. Start-ups look forward to higher valuation and funding, as these are essential for their survival and growth.

10. Start-ups are the core actors in an innovative ecosystem, with the other actors being financial suppliers, incubators, accelerators, universities and large companies. All these actors have shared goals, objectives, knowledge, skills, technologies and capabilities, which gradually evolve as the ecosystem grows.

11. Incubators help (Tech) Start-ups to overcome the liability of smallness and newness, by supporting them during (a) germination (pre-incubation), (b) incubation and (c) consolidation (post-incubation).

12. Start-ups develop and/or use technology, obtained either through R&D or open innovation.

13. Start-ups attempt to implement their dynamic capabilities (sensing, seizing and transforming), with a specific focus on innovative, founders’, social and collaborative capabilities to enhance their competitive advantage.

14. Start-ups alter their business strategies along their lifecycle. During early stages, when there is a resource crunch, Effectuation would be appropriate, followed by Causation during their growth stage, and adopting continuous innovation, to sustain their growth and push back the maturity stage.

15. Start-ups attempt to have a unique innovative business model that is repeatable, scalable, profitable and viable.

16. Start-ups aspire for scalable and high growth in their market, turnover and workforce; the growth drivers are (a) resources and capabilities, (b) founding team composition, (c) strategy and business model adopted and (d) characteristics of the local environment.

17. Start-ups grow hand-in-hand with their growth in social capital/networking with relevant stakeholders in the Start-up ecosystem; they attempt to use social media to enhance their social capital and reputation.
18. Start-ups suffer from a shortage of resources (limited capital, few employees, few alliances, little experience, etc.), which calls for effective resources management by the founding team, and application of effectuation principles.

19. Internal organizational processes are not well established in a Start-up. They typically lack business experience and marketing skills.

20. Start-ups need to have strategic communication with internal and external stakeholders.

21. Start-ups create value in the society by creating new jobs, stimulating the economy, and facilitating wealth creation for the nation.

22. Start-ups operate in an environment dominated by a high degree of uncertainty and complexity due to their newness and smallness and also since they attempt to address unspecified customer requirements.

23. Start-ups are prone to high risk of failure during their first year, due to the uncertain environment in which they operate; this risk of failure can be reduced by (a) understanding customer requirements, (b) learning from previous failures, (c) applying the lean methodology, (d) by being cost-conscious and (e) having entrepreneurial knowledge.

It can be observed from the above consolidated characterization that there is considerable consistency in the views among these 15 LR papers, on each of the character codes. Thus, we can conclude that we can group all these firms known by different names.

To know if these common characteristics would be applicable for all the 27 differently named Start-ups (see Table 1), we analysed these names. Based on the meanings for each name, we grouped them into six broad categories using the open coding technique (Saldana, 2013), as shown in Table 5. We assigned a common name for each of these six categories with justification. We observed a common thread among these different names, which is ‘innovation’. Innovation appears to be the lifeline of all these entrepreneurial ventures. All these Start-ups originated with an aim to generate innovative new products/services, their business models are innovative, and they operate in an innovative ecosystem. Looking at this pattern, we converged in assigning the name of ISs for these firms.

Among there six different names, we observe that corporate spin-offs are unique and different from the rest. Corporate spin-offs are Start-ups originating from Large Enterprises, and they are also known as Corporate Initiatives (Bhide, 2000). These firms could produce an innovative new product/service, but they are different from the other Start-up firms discussed above. These Corporate Initiatives face relatively less uncertainty when compared to other Start-ups, since they have the financial support and backing of the parent company (Bhide, 2000). Secondly, these Corporate Initiatives enter the market with the backing of an established brand name; thus, their entry and acceptance by the market are relatively easy. Thirdly, Corporate Initiates gets conceptualized and incorporated as a firm based on the market research undertaken by the parent company, whereas small Start-up firms enter the market with an assumed impression about the market requirements. Thus, a Corporate spin-off could be innovative, but they may not have the liability of newness and a high risk of failure when compared with a Tech Start-up/Lean
| Different Names of Start-ups                                      | Numbers | Category          | Justification                                                                                                                                 |
|------------------------------------------------------------------|---------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Fast-growing start-ups                                          | 14      | Tech start-up     | Tech Start-ups are innovative and dynamic firms with entrepreneurial activities to develop and introduce new technology with a focus on invention and technological advancements. These Start-ups are firmly grounded in new knowledge-based entrepreneurship (Hernandez, et al., 2018) |
| High-technology firms                                           |         |                   |                                                                                                                                             |
| High-technology businesses                                      |         |                   |                                                                                                                                             |
| Hi-tech firm                                                    |         |                   |                                                                                                                                             |
| High-tech start-ups                                             |         |                   |                                                                                                                                             |
| Internet-based start-ups                                       |         |                   |                                                                                                                                             |
| Internet business start-up                                      |         |                   |                                                                                                                                             |
| New technology-based firms (NTBFs)                              |         |                   |                                                                                                                                             |
| Software start-up                                               |         |                   |                                                                                                                                             |
| Small-scale technology-based start-ups                          |         |                   |                                                                                                                                             |
| Hardware start-up                                               |         |                   |                                                                                                                                             |
| Tech start-up                                                   |         |                   |                                                                                                                                             |
| Technology new ventures                                         |         |                   |                                                                                                                                             |
| Technology-based start-ups                                      |         |                   |                                                                                                                                             |
| Academic spin-offs                                              | 4       | University spin-offs | Firms that are associated with universities/educational institutions which aim to transform technology/knowledge developed in these academic institutions. The educational institution provides support to Start-ups, in terms of knowledge and infrastructure to create a new innovative product (Spender et al., 2017) |
| New spin-offs or spinouts                                       |         |                   |                                                                                                                                             |
| University spin-offs                                            |         |                   |                                                                                                                                             |
| University technological spin-offs                              |         |                   |                                                                                                                                             |
| Start-up Type                        | Count | Definition                                                                 |
|-------------------------------------|-------|-----------------------------------------------------------------------------|
| Innovative start-ups                | 4     | ISs are nascent entrepreneurial ventures, which innovatively convert ideas into new products/processes. They are designed to achieve a repeatable and scalable business model (Ojaghi et al., 2019) |
| Digital start-up                    | 2     | Lean start-ups: A human institution designed to create new products and services under conditions of extreme uncertainty. A methodology oriented to help organizations carry out experiments by building an MVP and iterate when looking for an innovative and sustainable business model (Bortolini et al., 2018) |
| Silicon Valley start-ups            | 2     | Silicon Valley start-ups: Start-ups, located in Silicon Valley in the US, were known to create innovative companies that became a driving force for countries’/regions’ economic growth. Start-ups that have the potential to become an innovative company and moving the regional economy upwards are referred to as Silicon Valley start-ups (Wiesenberg et al., 2020) |
| Corporate spin-off                  | 1     | Corporate spin-off: A venture that is nested within a large organization, where decision making is influenced by the parent firm (Knight et al., 2020) |

**Source:** The authors.
Start-up. Therefore, we would not like to group Corporate Spin-offs along with the ISs.

Proposition 1: We propose all the 26 differently named Start-ups can be addressed as ISs, which can be characterized using the 23 characters listed above.

Theoretical contribution: The above characterization of ISs adds value to Schumpeter’s theory of Innovative entrepreneurs (Acs, 2010; Carree & Thurik, 2010). Schumpeter considers an entrepreneur as an innovator who creatively destroys existing market structures and creates new economic space. These Schumpeterian entrepreneurs create market opportunities, use technology and operate from large enterprises. Except for the aspect of large enterprises, the founders/owners of ISs are Schumpeterian entrepreneurs.

In the following paragraphs we will address our research question (iv) What is the conceptual association/relationship between Start-ups and MSMEs?

In the process of undertaking the study on the characterization of Start-ups/ISs, we found that the terms Start-ups and SME/MSMEs are used interchangeably. We studied few LR papers on SME/MSE. There are some papers which state that Start-ups and MSMEs are similar types of firms (Silva et al., 2020; Wiesenberg et al., 2020). Interestingly, a majority of the LR papers on MSME/SME are considering Start-ups to be a part of MSMEs/SMEs (Demartini & Beretta, 2019; Hossain & Kauranen, 2016; Nolan & Garavan, 2016). However, some LR papers on Start-ups highlight that Start-ups and MSMEs/SMEs are different types of firms (Hanchi & Kerzazi, 2020; Ojaghi et al., 2019; Pahnke & Welter, 2019). Ojaghi et al. (2019), in their LR paper, have highlighted that Start-ups and SMEs are different types of firms and listed the following differences: (a) Start-ups do not have a customer at the beginning, and cannot apply a pre-designed business model like SMEs do, (b) Survival is the highest priority for a Start-up unlike SMEs, (c) Success of SMEs are not due to innovation, unlike Start-ups and (d) Though both Start-ups and SMEs are small, SMEs are a complete and miniature version of a large company, whereas Start-ups due to their small size, may suffer from a lack of structure, and lack of tangible and intangible resources. Pahnke and Welter (2019), studying German’s Mittelstand (equivalent to SMEs) have highlighted the differences between Mittelstand (SMEs) and Silicon Valley enterprises (ISs). They suggest that future entrepreneurial research should acknowledge the diversities and heterogeneities of both these types of firms.

After a review of literature related to Start-ups and MSMEs/SMEs, we propose that there are both similarities as well as differences between Start-ups and MSMEs. The similarities between Start-ups and MSMEs are as follows:

1. Both contribute toward the enhancement of local and national economy/GDP. Both Start-ups (Hillemane et al., 2019) and MSMEs (Kersten et al., 2017) support economic growth.
2. Start-ups (Pugliese et al., 2016) and MSMEs (Nolan & Garavan, 2016) operate to provide value to customers and generate profits for themselves.

3. Both Start-ups (Hillemane et al., 2019) and MSMEs (Hossain & Kauranen, 2016; Kersten et al., 2017) provide employment opportunities.

4. During the early stages,
   a. both Start-ups and MSMEs have resource constraints (Demartini & Beretta, 2019).
   b. both Start-ups and MSMEs are flexible and informal in strategy formulation (Nolan & Garavan, 2016).
   c. both these types of firms are dependent on their owner(s), who is also the manager(s). The personal characteristics and values of the owner-manager play an important role in organizational practices. (Nolan & Garavan, 2016)

5. Academicians researching on both Start-ups (Zaech & Baldegger, 2017) and MSMEs (Kersten et al., 2017; Nolan & Garavan, 2016) have stated that there are no acceptable definitions for both these types of entrepreneurial ventures.

Though we observe these similarities between Start-ups and MSMEs, we also observe something very unique about the ISs, which are as follows: (a) come out with new innovative products/services, which are currently not available in the market, after proving the validity of the prototype with select customers, (b) attempt to solve latent/unspecified problems of the customers, (c) use technology obtained either through open innovation or by R&D, (d) operate in a volatile environment, and thus survival is their highest priority, (e) have innovative business models, which are repeatable and scalable, (f) are adaptable and ready to quickly pivot till they are able to meet their customers’ requirements, and (g) could be temporary organizations.

Not all firms registered as MSMEs have the above unique characteristics in them. Most of the MSMEs that we observe in the industrial estates produce traditional products/services. These MSMEs, which make traditional/conventional products/services, can be called C-MSMEs. Thus, we propose to classify and study the whole set of MSMEs into two categories, namely, C-MSMEs and other firms that do not follow the conventional approach. These firms, which do not generate traditional/conventional products/services, are called as ISs (whose characterization has been discussed above). There are distinct differences between C-MSMEs and ISs, which are tabulated in Table 6, along with relevant literature support and empirical observations. More than 10 distinguishing features between ISs and C-MSMEs are identified.

*Proposition 2*: We propose a conceptual framework to represent ISs and C-MSMEs among MSMEs, as depicted in Figure 2. It is observed that MSMEs can be conceptually split into two subsets, namely, ISs and C-MSMEs, and there is an intersection between ISs and C-MSMEs. This intersection is due to a few similar characteristics observed between the two. There are also distinct differences between these two types of firms.
| Criteria               | Innovative Start-ups                                                                 | Conventional MSMEs                                                                 |
|------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| **Products/Services**  | 1. Come out with new innovative product/services, value propositions (Hanchi & Kerzazi, 2020; Kuester et al., 2018) | 1. Come out with established product/services (Hanchi & Kerzazi, 2020) |
| **Firm**               | 1. These are new firms with age less than 10 years (Hanchi & Kerzazi, 2020; Wiesenberg et al., 2020) | 1. Largely classified by the size (number of employee), based on the government rules (Hossain & Kauranen, 2016). There are no age criteria. |
| **Customer requirements** | 1. Customers’ requirements are largely latent/unspecified. The founding team has to identify customers’ problems and try to solve them by constantly pivoting. 2. In some instances, the general customers’ requirements are known, but the products/services which meet these requirements are not readily known. They have to be developed after R&D. 3. Do not have any customer at the beginning (Ojaghi et al., 2019). | 1. Customer requirements are specified. 2. Based on defined technical requirements (or product/service specifications) from the customer, the process of creating and delivering the products/services are planned. 3. Have some clarity as to who the customers are. |
| **Innovation**         | 1. The success of a Start-up is largely due to Innovation (Ojaghi et al., 2019). 2. The types of innovation largely attempted are Breakthrough (Tripathi, Seppanen et al., 2018), Radical (Hernandez et al., 2018) and Disruptive (Christensen et al., 2015). | 1. Innovation is not a cause of success (Ojaghi et al., 2019). 2. The types of innovation largely attempted are Sustaining and Incremental (Hossain & Kauranen, 2016). |
| **Scalability of Business** | 1. Exponential growth is the aim. 2. All ISs aim to have scalable, repeatable, profitable and viable business models. (Hanchi & Kerzazi, 2020; Silva et al., 2020) | 1. The business scale is mainly small, considering certain grounded criteria such as the number of employees, annual turnover, owners’ equity, etc. (Hossain & Kauranen, 2016). 2. Very few C-MSMEs aim to have scalable and repeatable business models. Instead, they seek a stable model. |
Technology
1. ISSs try to develop their own medium or high-end technology using R&D.
2. Some of them obtain Intellectual Property (IP) and evolve the business model based on that.

High-end technology is generally not used. Simple technologies would be used. Have less formalized R&D (Hossain & Kauranen, 2016).

Driving force
1. The intent of the founders/owners is to disrupt the market with a scalable, repeatable, and impactful business model.

The intent of the small business owners is to be their own bosses and secure a stable place in the local market.

Human resources
1. Require creative and innovative human resources (Sauermann, 2017)

Require experienced manpower (Demartini & Beretta, 2019)

Funding
1. Generally, start with seed funding from founders and/or their family/friends. Once thriving, they receive an additional series of funds from angel investors, venture capitalists, and will eventually attempt to go for an Initial Public Offer (IPO).
2. Generally, banks would not be willing to fund due to the high risks and uncertainties with the business models.
3. External funds are not accounted for as debts, but as shares in ownership equity.

Largely, start with either saving of founders and/or their family and friends or a bank loan or a governmental grant. Once successful, they rotate the money generated from the business. They would seek external funds only if they have to expand their business. May not aspire to go for an IPO.

Small businesses are financed with simple bank loans (Demartini & Beretta, 2019) and government grants (Kersten et al., 2017) since the risks and uncertainties can be understood.
3. External funds are accounted for as debts and not as shares in the equity of ownership.

Ownership Control
1. The founders are initially the owners but are willing to share the ownership with funders.
2. They may not mainly operate as a family-run business.
3. With each series/round of funding, the founder’s equity is eroded, and the ownership of the company diversifies.

The founders are generally the owners of these enterprises (Nolan & Garavan, 2016).

They could mostly operate as family-run businesses.
3. The owners’ equity is generally not diluted. To a small business owner, relinquishing control would defeat the purpose of running the business.

(Table 6 continued)
(Table 6 continued)

| Criteria                  | Innovative Start-ups                                                                 | Conventional MSMEs                                                                 |
|---------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Operational Uncertainty   | 1. Subjected to situations of extreme uncertainty and modelling the uncertain operation is a challenge.  
2. Are subjected to a high risk of failure or mortality in the first year (Hanchi & Kerzazi, 2020). | 1. These businesses operate in traditional sectors (Demartini & Beretta, 2019) and aim to clone an existing business (business model, pricing, target customer, product/service, etc.). Thus, the degree of operational uncertainty is relatively low. The success depends mainly on operational execution, which can be modelled with high accuracy. |
| Focus                     | 1. Focus is to grow by way of ensuring that customers accept their products or services, and then obtaining funds for scalability.  
2. Aim to be dominant players in the markets. Work towards achieving exponential growth.  
3. Try to expand the resources, depending on the needs of scalability and repeatability.  
4. The preferred type of employee is creative and innovative people.  
5. The founders’/owners’ focus is on increasing the valuation of the enterprise and then subsequently improving the bottom-line of the enterprise. | 1. The focus is to be independently owned, operated and organized for profit. They look forward to create consistent and stable profits.  
2. Need not be dominant in their field. Largely do not aspire for exponential growth. Seek stable profitability and very controlled growth.  
3. Try to work with limited resources (Demartini & Beretta, 2019).  
4. Loyal persons are preferred to be recruited and held as employees.  
5. The founders’/owners’ focus is on improving the operational efficiency and thus improving the bottom-line of the enterprise. |

**Source:** The authors’ compilation from literature as referred above.
**Scope for Further Research**

In the process of undertaking this study, we found scope for further research:

1. **Type of innovation**: The literature shows that the innovation adopted by Start-ups could be Breakthrough (Yordanova, 2018), Radical (McDermott, 2002), Disruptive (Christensen et al., 2015), Sustaining or Incremental (Hossain & Kauranen, 2016). Based on empirical observations, it would be interesting to identify the type of innovation adopted by these ISs. Which types of innovation are adopted by these ISs, and is there any pattern visible?

2. **Lifecycle stages**: What would be the lifecycle phases/stages of these Innovative Start-ups? There are several studies on ISs identifying different lifecycle stages for them. Hillemane et al. (2019) have identified three lifecycle stages (pre-incubation, incubation and post-incubation). Van de Ven et al. (1984) proposed five stages with two stages in Pre-Start-up and three stages in the Post-Start-up years. Clarysse and Moray (2004) proposed four phases after studying research-based Spin-offs. Cumming (2007) identified five stages after studying Start-ups from the investment perspective. Interestingly, Levie and Lichtenstein (2010), after their extensive LR on organization lifecycles, listed 104 different lifecycle models from the then existing literature. They concluded that there was no consensus/agreement on the number of lifecycle phases/stages and proposed a new dynamic state approach for entrepreneurial organizations, instead of the traditional lifecycle stages/phase model. It is clear from the above literature evidence that there is a lack of clarity on the lifecycle stages and its applicability for Start-ups. The relevance and applicability of lifecycle models for ISs deserve both, theory-building as well as empirical research.
3. The Proposition-2 above, representing ISs among MSMEs within a conceptual framework, needs to be studied further with empirical observations and theoretical support.

4. The application of the following theories to ISs could yield some insights and interesting results.
   a. Bortolini et al. (2018) have suggested that Lean Start-ups should experiment rather than plan and make the best use of limited resources. Hanchi and Kerzazi (2020) indicated that during the early stages, a Start-up’s innovative capability and dynamic capabilities follow effectuation logic. So, the applicability of Effectuation behaviour during the early stage of ISs and of Causation during the later stages could be examined for discovering the value of resource deployment at various stages to enable the ISs to survive and grow by minimizing their risk exposure.
   b. Applicability of chaos theory: Chaos theory can be used for understanding the dynamic evolution of industries and the complex interactions among the stakeholders of the ecosystem (Levy, 1994). Since ISs operate in a dynamic environment having complex interactions with various actors of the innovative ecosystem, the applicability of Chaos theory to ISs merits investigation.
   c. Contingency theory: Contingency theory advocates that the influence of environmental variables will be significant for effective management of a firm where the rate of changes and the associated degree of complexity continues to accelerate (Luthans & Stewart, 1977). The dynamics of the early stage organizational structure, resource deployment and interactions with stakeholders of ISs should be investigated to understand their stability in the complex environments of their functioning. The principles of contingency theory will be eminently applicable in carrying out such an investigation.

Contributions of This Work

The following are the main contributions of this article in the area of entrepreneurship.

1. Robust characterization of ISs, based on LR papers published by top journals.
2. Proposing a conceptual framework distinguishing ISs among MSMEs, based on their typical characteristics.
3. Comparing and contrasting ISs and C-MSMEs, based on inputs consolidated from the literature.

This work will be useful predominantly for policymakers, and also for entrepreneurs and investors in understanding ISs and appreciating the fundamental differences between these entrepreneurial ventures. Policymakers will be enabled
to formulate policies effectively and distinctly targeted at both ISs and C-MSMEs, given that both enhance the economy/GDP of a nation. Specific policies concerning markets, legal (patenting) and fiscal matters, business-networking, mentoring, and so on, could be formulated, based on the characterization presented in this article. This study will also benefit academicians since the characterization will help in a better understanding of the structural and functional classification and categorization of ISs and MSMEs.

**Limitations and Future Work**

This work on the characterization of Start-ups and distinguishing them among MSMEs is based on a SLR of Start-ups. SLR on MSME/SME has not been undertaken; LR papers on MSMEs/SMEs were studied and used for the development of the proposed framework. The conceptual framework for locating ISs among MSMEs needs empirical validation. This article raises four new research questions, which can be a starting point for new research.

**Conclusion**

Based on a SLR, we have characterized Start-ups by integrating the knowledge provided by various earlier authors. The term ‘Innovative Start-ups’ (ISs) is proposed for Start-up firms referred to otherwise by different names such as Tech Start-ups, Lean Start-ups, University spin-offs, and Silicon Valley Start-ups, based on their common characteristics. It is observed that the typical characteristics of ISs are (a) they are new and small entrepreneurial ventures operating in an innovative ecosystem to exploit market opportunity, (b) they develop and commercialize new products/services and attempt to disrupt the traditional market through innovation, (c) they fulfil latent needs of customers or solve customer’s problems, (d) they have a small, flat, agile and less formal organization of creative, capable and innovative human resource, (e) they have limited resources and have the liability of smallness and newness, which keeps changing through their lifecycle, (f) they are adaptable, and they keep pivoting towards implementing scalable, repeatable, profitable and viable business models, (g) they use technology and knowledge developed from R&D and open innovation, (h) they attempt to implement their dynamic capabilities to enhance their competitive advantage as well to have a scalable growth, (i) they operate in a complex and uncertain environment and thus get exposed to very high risks of failures, and (j) they create value in and for society by creating new jobs, stimulating the economy and facilitating wealth creation for the nation.

This article further proposes that MSMEs can be conceptually classified into ISs and C-MSMEs. More than 10 distinguishing features between ISs and C-MSMEs are shown. Based on theoretical pieces of evidence, this article posits that ISs are a proper subset of MSMEs and have some intersections of characteristics with C-MSMEs. The above observations need further empirical validation.
The characterization and identification of the distinguishing features between ISs and C-MSMEs will help policymakers, investors and other stakeholders associated with entrepreneurship to take more knowledgeable and informed decisions for enabling the realization of a flourishing Start-up and entrepreneurial ecosystem.

Declaration of Conflicting Interests
The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding
The authors received no financial support for the research, authorship and/or publication of this article.

Notes
1. Different authors have used the term enterprise, firm, organization, and business venture interchangeably. Accordingly, we have also used these terms interchangeably.
2. SME and MSME are used interchangeably in this paper.
3. This 23 × 15 matrix table can be shared with the reviewers, as required.

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