

Innovation and entrepreneurship research in India from 2000 to 2018: a bibliometric survey

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Abstract

Purpose – Innovation and entrepreneurship are regarded as the key drivers to steer the engine of economic development in any nation. As a result, to understand the context and process of innovation and entrepreneurship there has been a steady rise in scientific literature and empirical studies. The purpose of this paper is to study the trends and progress of academic research on innovation and entrepreneurship in India by identifying the key articles, journals, authors and institutions.

Design/methodology/approach – Scientometric methods especially bibliometrics is used, for measuring the maturity of this research field in the country. The paper studies the research landscape in innovation and entrepreneurship in India by doing a bibliometric analysis using data from publications indexed in the Scopus database from the year 2000 to 2018. The study takes a multidisciplinary review of the literature in innovation and entrepreneurship research in India and could be used as a reference for future studies in this theme.

Findings – The study finds an increase in the scholarly studies in innovation and entrepreneurship in India in the last decade. It was also found that a large number of publications were joint-authored and collaborations between Indian and foreign universities is happening. The paper also highlights the authorship patterns, top journals and the most cited papers.

Research limitations/implications – A major limitation of this study is that it has considered publications which are indexed in Scopus. This paper has contributed by highlighting the growth of studies in the field of innovation and entrepreneurship in the Indian context. The results can be used by future studies in this area as a starting point to highlight the nature of this research area.

Originality/value – The study attempts to present a trend analysis of published literature on innovation and entrepreneurship in India.

Keywords India, Entrepreneurship, Innovation, Bibliometrics

Paper type Research paper

1. Introduction

Innovation and entrepreneurship are considered today to be the engines to steer the economic progress of any nation. There has been increased attention from academicians and policymakers in the role of entrepreneurship in economic growth, for both emerging and advanced nations of the world (Audretsch and Thurik, 2001). It was Schumpeter (1934) who first theorised how entrepreneurial activities are a vehicle of innovation and plays a key part in economic development through a process of creative destruction. Innovations are introduced in the market today by firms and new startups that challenge the existing state of affairs. Hence, entrepreneurship is understood to be the medium through which innovations are diffused into the economy. Thus, entrepreneurship transforms knowledge into an economically valid output that positively impacts the growth rates.

In the Schumpeterian tradition (Mark I), entrepreneurship and innovation are considered to be synonymous, as entrepreneur is the individual who creates new products, new materials, and new forms of organisations (Schumpeter, 1934). Later, management scholar Drucker (1985) linked entrepreneurship with innovation and explained how entrepreneurs use innovation as a tool in their work. Innovation was largely conceived to be in the possession of the advanced nations of the world during the twentieth century (McCloskey, 2010; Mokyr, 2002). However, in the twenty-first century, geography of innovations started to change as innovations from emerging nations like China, India and Brazil started to get



recognition in the world (Prabhu and Jain, 2015). These innovations were not radical as the ones been developed in the advanced nations of the world. As a result, different terms started to emerge to characterise these innovations, like frugal, inclusive and *jugaad* (Radjou *et al.*, 2012; Kumar and Bhaduri, 2014).

Innovation and entrepreneurship have both become quite fashionable and overused terms in both the academic and policy circles. Hence, it becomes important to define innovation. One such definition often cited in literature is provided by Gemünden and Salomo (2004) where they have defined innovation as the result of a creative process which involves multiple actors from one or more than one organisation and institutions. This leads to a qualitatively new means-end combination which is introduced in the market or the operations of a firm for the first time. Innovations can be categorised and analysed in the following dimensions such as object, degree of novelty, perspectives and process (Hauschildt and Salomo, 2011). Similarly, entrepreneurship is regarded as a multidimensional term which is difficult to define. The most compelling and prevalent view on entrepreneurship focuses on the new economic opportunities and the introduction of new ideas in the market. Audretsch (1995) writes that entrepreneurship is all about change in general and the process of change in particular. The entrepreneurs in her view are the agents who manifest this change. Hence, entrepreneurship involves the various actions which are undertaken by entrepreneur for establishing a new enterprise. In this process, the entrepreneur identifies and uses opportunities in the existing market, converting the ideas into actions, undertaking promotional activities to launch an enterprise, striving for excellence in the field and bearing the risk and uncertainties which are involved.

As the importance of innovation and entrepreneurship for economic development began to be realised, there was a rise in scholarship to understand the context, process and management of innovations which focussed both on the macro (policy, economics) and micro (management, strategy, design, motivation) level factors (Chatterjee and Sahasranamam, 2014). In this paper, an attempt is made to analyse the trends in scholarship on innovation and entrepreneurship research in India. Therefore, a bibliometric study of research contribution in this field was considered to be the suitable way of carrying out this analysis. Bibliometric analysis is considered an appropriate way for describing links between and among the scholarly works and the state of research on any theme by analysing the published research works (Borgman, 2000; Pillania, 2011). Hence, this paper presents a trend analysis of the innovation and entrepreneurship literature on India that has been published and indexed in the Scopus database from 2000 to 2018. This led to an initial result of 352 records, out of which, 318 were found to be relevant to the research topic and were retained for analysis.

The remainder of the paper is structured as follows. The next part of the paper elaborates our methodology in detail. The third part discusses and presents our results. The last part concludes with discussion, limitation and contribution of this study.

2. Methodology

To promote economic development in post-liberalisation reform India, the various state governments along with the central government at national level started to pursue various growth and development policies to encourage entrepreneurship and self-employment (Ahluwalia, 2002). Though the major reforms leading to the liberalisation of the Indian economy were passed in the year 1991, the country had to witness various unstable governments at national level which hampered its policies and progress. It was in year 1999, when a national party with a decisive mandate came at centre and India started to adopt policies for encouraging innovation and entrepreneurship in the country. Therefore, this study selects 2000 as the start year for the analysis.

The quantitative analysis of research publications is referred by different terms, most notable among them all, are bibliometrics, scientometrics and infometrics. Although, these terms are used for signifying similar and overlapping methodologies, they are not necessarily synonymous

(Siluo and Qingli, 2017). The term bibliometrics was first used by Pritchard (1969) who defined it as “the application of mathematical and statistical methods to books and other media of communication”. Later, Broadus (1987) widened the scope of the term as the quantitative study of physically published units, or of bibliographic units. Scientometrics was coined by Russian scholars Nalimov and Mulchenko (1969) to denote the study of literature of science and technology. Hood and Wilson (2001) write that much of the scientometrics is identical to bibliometrics and much of the bibliometrics research is published in the Scientometrics journal. Infometrics is the most recent of the terms which were coined by Nacke and is used for studies applying mathematical methods for science objects which are published in any form of information. Hence, infometrics include non-scholarly communities where any scientific information is produced, communicated and used (Ingwersen and Christensen, 1997). We use the term bibliometrics for the purpose of this paper due to the large number of literature which is available for implementation and the use of academic research database.

Data for this paper were collected in January and February 2019 for articles and papers published in the last 18 years, i.e. from 2000–2018, from the Scopus database. Scopus is commonly used as a reference database for bibliometric analysis. The database was searched for records on innovation and entrepreneurship in India using the keywords Innovation*, Entrepreneurship*, and “India*” available in title, abstract and keyword fields. The asterisk was used to retrieve all the potential correct words while the use of quotation marks is for retrieving exact phrases. As a result, the following search string was used to retrieve data from Scopus.

(TITLE-ABS-KEY (innovation*) AND TITLE-ABS-KEY (entrepreneurship*) OR TITLE-ABS-KEY (entrepreneur*) AND TITLE-ABS-KEY (India*) AND NOT TITLE-ABS-KEY (Indiana)) AND PUBYEAR > 1999 AND PUBYEAR < 2019

Entering this above search string, a total of 352 records were retrieved. On further analysis of the records, 318 were found relevant and retained for this paper. The results retrieved were exported to Microsoft Excel 2016 for tabulating the characteristics of publications, kinds of publications, countries which are producing the research, productive journals and most cited papers.

3. Key findings

3.1 Characteristics of literature on innovation and entrepreneurship in India

As described in the methodology section above, a total of 318 articles were found to be relevant for analysis. A line graph depicting the evolution of publications over the years from 2000 to 2018 is presented in Figure 1. From 2000 to 2007, the annual output of research on innovation and entrepreneurship in India was at very low level. The research output

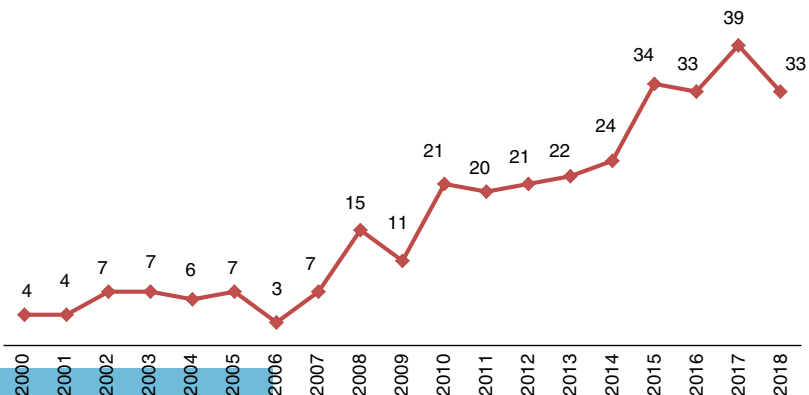


Figure 1.
Number of
publications per year

started to increase from 2008 when the total number of publications was almost double than the previous years. In general, majority of research (> 75 per cent) was published from 2010 to 2018, which signifies that innovation and entrepreneurship in India are gaining interest in the academic community. This significant increase in the research output from 2010 can also be attributed to Indian government’s agenda of declaring 2010–2020 as the “decade of innovation”. As a result, many programs and initiatives were launched by the Indian government to boost the innovation ecosystem in the country.

The above publications are categorised into the type of documents such as research articles, conference papers, book chapters and so on. The figure below informs the share of each type of publications.

Of the 318 publications, 61 per cent of them were research articles, 15 per cent were conference papers. Book chapters represented nine per cent of the total publications, whereas books and book reviews represent eight and five per cent of the total publications respectively. Conference reviews, editorials and notes make up for two per cent of the total publications listed as others in the above figure.

A total of 163 authors have contributed to the 318 research articles on the theme of innovation and entrepreneurship in India. However, only 57 authors (31 per cent) have written two or more papers since 2000, and the author with the most number of publications has been M.H. Bala Subramanya who produced nine papers, followed by S. Majumdar and G. Surie with four papers each (Figure 2). A total of 47 authors have written at least two papers, 109 authors have one paper on the theme of innovation and entrepreneurship in India, while seven papers were undefined in the retrieved results.

On further analysis of the authorship patterns it was found that of the total 318 publications, 127 were single authored (39 per cent). On the other hand, 191 (60 per cent) were joint-authored papers; with 92 as two-author papers, 65 as three-authored publications and 29 papers had four or more authors (Table I).

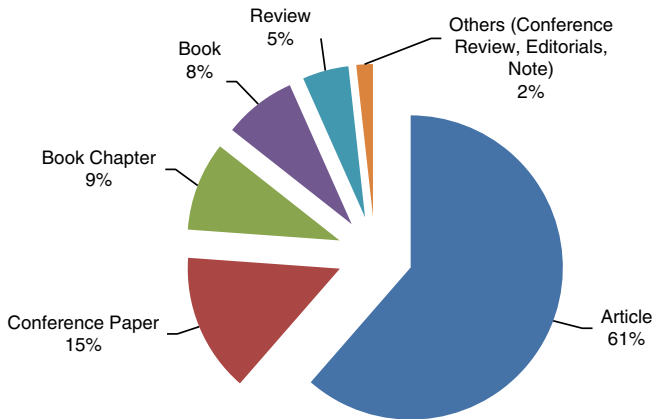


Figure 2. Type of publications

Authorship Pattern	Total number of papers
Single-authored papers	127
Two-authored papers	92
Three-authored papers	65
Four or more authors	29
Undefined	7

Table I. Authorship pattern of publications

There were 160 affiliations which produced the 318 publications. Out of these 160 affiliations, Indian Institute of Science – Bangalore had the most number of published papers which is 14. Indian Institute of Management – Bangalore has 12 published papers, while, Indian Institute of Management – Ahmedabad has nine publications. Among the foreign affiliations, Adelphi University and Harvard University have the most number of publications with five and four research papers respectively. Seven affiliations had at least three published papers, whereas 52 affiliations had two published papers. There is one paper from 101 affiliations between 2000 and 2018 on the theme of innovation and entrepreneurship in India. Figure 3 below depicts the affiliations with at least five or more published papers.

By analysing the research output from different countries on the theme, 38 individual countries were identified, while 22 papers were undefined as per the country of production. Out of these 38 countries, India had an affiliation in 45 per cent these publications while 37 other countries had representation in the rest of the research output (Figure 4). This signifies that academics from different nations are interested in studying innovation and entrepreneurship in India. Out of the 37 nations other than India; The USA and UK are represented in 86 publications (30 per cent) (Figure 5).

Since, the subject area of the theme is India, it is expected that India will be dominating the research. However, the interest of other nations on studying innovation and entrepreneurship in India is also mentioned in the study by Nair *et al.* (2015) where they reviewed the literature on innovation in India. The authors found that there is a growing interest among scholars around the world to identify the innovation phenomenon unique to India like “frugal” and *jugaad* as it serves the need of the poor.

3.2 Epistemological orientation of literature on innovation and entrepreneurship in India

The second part of the analysis is started by categorising the publications to their subject areas in which they are published. Figure 6 depicts the different subject areas of the publications on innovation and entrepreneurship in India.

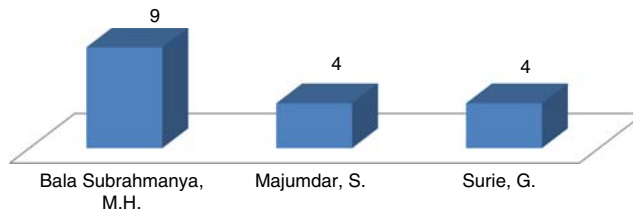


Figure 3. Authors with most papers

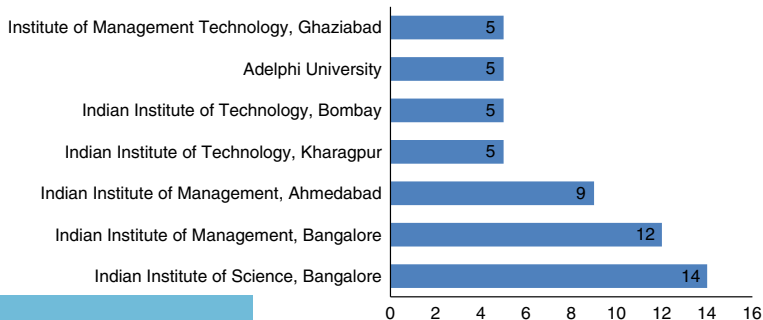


Figure 4. Affiliations with five or more publications

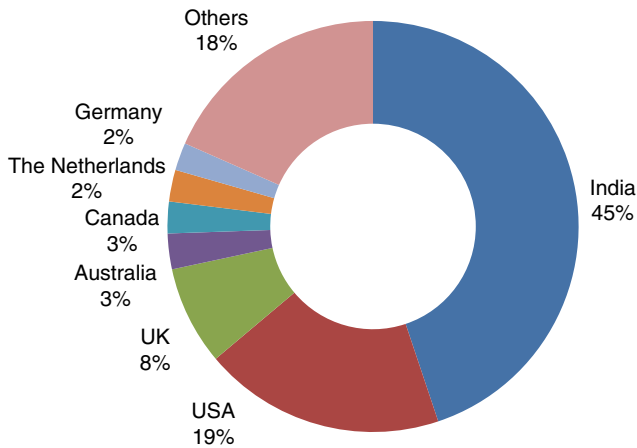


Figure 5. Country productivity of publications

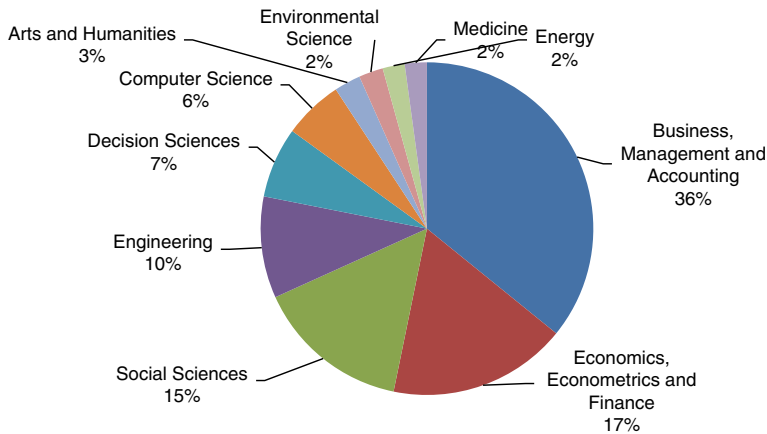


Figure 6. Subject areas of publications

As evident from the figure, diverse subject areas have been exploring the topic of innovation and entrepreneurship in the country. Business, management and accounting oriented publications are the maximum making for 36 per cent of the total publications, followed by economics, econometrics and finance publications which represent 17 per cent of the total publications. There are 15 per cent publications from the social science disciplines too. Engineering has contributed 10 per cent of the total publications; decision science makes for 7 per cent, and computer science disciplines making six per cent contribution to the literature from 2000 to 2018. Arts and Humanities have also contributed to the theme with 3 per cent of publications. Environmental science, energy and medicine each have a 2 per cent contribution in the total research output. This means that knowledge of innovation and entrepreneurship is being produced from different disciplines and is not only limited to business or economics research community. However, a deeper analysis in this trend is required to know about interdisciplinary or multidisciplinary collaborations on the subject.

A number of journals are dedicated to publish research on the topic of innovations and development around the world. Table II lists the journals who have published at least three or more studies on the topic of innovation and entrepreneurship in India.

Technological Forecast and Social Change have published seven publications on our searched theme, while *International Journal of Entrepreneurship and Innovation Management* has five publications. *International Journal of Applied Engineering Research*, *Journal of Entrepreneurship* and *Journal of Intellectual Property Rights* has published four papers each on the subject. Journals like *AI & Society*, *Asia Pacific Journal of Management*, *International Journal of Applied Business and Economic Research* and *Journal of Entrepreneurship in Emerging Economies* has three publications each in this theme.

In Table III, the 14 most cited publications have been listed. This table also mentions the year of publication of these studies, author names and the total citations received by the paper.

As we see in the table, about 14 publications have received more than 40 citations in other publications indexed in Scopus. In total, 32 authors have contributed towards these 14 most cited publications. In total, 11 of these publications are research articles, whereas three are published as books. The most cited paper had been by Bresnahan *et al.* (2001) "Old economy" inputs for "new economy" outcomes: Cluster formation in the New Silicon Valley' receiving 351 citations. This paper has discussed the sources of success in the regional clusters of entrepreneurship and innovation in the Silicon Valley including case studies from emerging countries like India, Israel, Taiwan and Ireland. Similarly, the paper by Gereffi *et al.* (2008) received 74 citations which study the engineering curriculum of countries like India, China and the USA. They raise an important point of quality being of graduates as the most important factor having impact on innovation and entrepreneurship in the country. Among the books, *The Venturesome Economy: How Innovation Sustains Prosperity in a More Connected World*, by Bhidé (2010) is the most cited with 67 citations. This book has done extensive field studies on the venture capital-backed businesses for examining how technology advances in the modern economies. The paper by Kenney *et al.* (2013) "Coming back home after the sun rises: Returnee entrepreneurs and growth of high-tech industries" study the role of returnees in the economic development of their nation. This paper has received some 64 citations on Scopus. Miller and Hope (2000) paper on "learning to lend for off-grid solar power: Policy lessons from World Bank loans to India, Indonesia, and Sri Lanka", have done a cost analysis of World Bank's loans for off-grid PV to India, Indonesia and Sri Lanka while also providing policy lessons from these cases.

Among the India authors, the paper by Subrahmanya (2005) is the most cited having received 52 citations so far on other Scopus indexed publications. This paper presents an interesting study on the pattern of technological enterprises in the engineering industries in Bangalore and Northeast England of the UK. The paper on "resource-constrained innovation for emerging economies: The case of the Indian telecommunications industry" by Ray and Ray (2010) has received 50 citations. They have studied the Indian telecom sector and provided insights on the innovation models which suit the emerging market needs of a country. Gupta and Barua (2016) have a paper titled "Identifying enablers of technological innovation for Indian MSMEs using best-worst multi-criteria decision-making method"

Journal name	Total papers
<i>Technological Forecasting and Social Change</i>	7
<i>International Journal of Entrepreneurship and Innovation Management</i>	5
<i>International Journal of Applied Engineering Research</i>	4
<i>Journal of Entrepreneurship</i>	4
<i>Journal of Intellectual Property Rights</i>	4
<i>AI & Society</i>	3
<i>Asia Pacific Journal of Management</i>	3
<i>International Journal of Applied Business and Economic Research</i>	3
<i>Journal of Entrepreneurship in Emerging Economies</i>	3

Table II.
Journals with most
papers on theme

Title	Study area	Year	Authors	Citations
“Old economy” inputs for “new economy” outcomes: Cluster formation in the New Silicon Valley	High-tech industries	2001	Bresnahan T., Gambardella A., Saxenian A.	351
Getting the numbers right: international engineering education in the USA, China and India	Education	2008	Gereffi G., Wadhwa V., Rissing B.E.N., Ong R.	74
The venturesome economy: how innovation sustains prosperity in a more connected world	High-tech industries	2010	Bhidé A.	67
Coming back home after the sun rises: returnee entrepreneurs and growth of high-tech industries	High-tech industries	2013	Kenney M., Breznitz D., Murphree M.	64
Learning to lend for off-grid solar power: policy lessons from World Bank loans to India, Indonesia, and Sri Lanka	Renewable energy sector	2000	Miller D., Hope C.	55
Pattern of technological innovations in small enterprises: a comparative perspective of Bangalore (India) and Northeast England (UK)	MSMEs	2005	Bala Subrahmanya M.H.	52
Resource-constrained innovation for emerging economies: the case of the Indian telecommunications industry	Telecom Sector	2010	Ray P.K., Ray S.	50
Identifying enablers of technological innovation for Indian MSMEs using best–worst multi-criteria decision-making method	MSMEs	2016	Gupta H., Barua M.K.	48
On the diffusion of toilets as bottom of the pyramid innovation: lessons from sanitation entrepreneurs	Bottom of the Pyramid	2012	Ramani S.V., SadreGhazi S., Duysters G.	44
The tiger awakens: the tumultuous transformation of India’s patent system and the rise of Indian pharmaceutical innovation	Pharmaceuticals	2007	Mueller J.M.	43
Bridging the service divide through digitally enabled service innovations: evidence from Indian healthcare service providers	Healthcare	2015	Srivastava S.C., Shainesh G.	42
Asia 2050: realizing the Asian century	High-tech	2011	Kohli H.S., Sharma A., Sood A.	41
The invention of enterprise: entrepreneurship from ancient Mesopotamia to modern times	History	2010	Landes D.S., Mokyr J., Baumol W.J.	41
Modelling of continuity and change forces in private higher technical education using total interpretive structural modelling (TISM)	Education	2011	Prasad U.C., Suri R.K.	41

Table III.
Most cited publications

which identifies the important enablers of technological innovation in the context of the Indian MSMEs. The novelty of their paper lies in their methodology of using a multi-criteria decision-making technique known as the best–worst method to find out the most important enablers among these. Their paper has received a total of 48 citations.

An interesting paper on innovation and entrepreneurship in India is that by Ramani *et al.* (2012) “on the diffusion of toilets as bottom of the pyramid innovation: Lessons from sanitation entrepreneurs” which studies product innovations for the poor. They study the sanitation entrepreneurs of India and the diffusion of toilets in the regions which never had access to one. A paper on India’s success in the pharmaceutical sector is written by Mueller (2007) titled “the tiger awakens: the tumultuous transformation of India’s patent system and the rise of Indian pharmaceutical innovation”. This paper evaluates India’s first 18 months after adopting the TRIPS regulations on product patenting and critiques the new law and the capacity of India’s administrative and judicial infrastructure to implement it.

Srivastava and Shainesh (2015) paper on “bridging the service divide through digitally enabled service innovations: Evidence from Indian healthcare service providers” talks on how information and communication technologies can be used for bridging the services divide for enhancing the capabilities of service disadvantaged segments of the society. The edited volume by Kohli *et al.* (2011) titled as *Asia 2050: Realizing the Asian Century*, suggests how Asia can aim to achieve the technological levels of Europe and the challenges present before them. Their book also identifies some of the policy and institutional interventions that need to be made to avoid the middle-income trap.

On entrepreneurship in India, the book by Landes *et al.* (2010) *The Invention Of Enterprise: Entrepreneurship From Ancient Mesopotamia to Modern Times* chronicles the history of enterprises and businesses in the ancient civilisations such as Mesopotamia, Middle East, China, Japan and India. Their book highlights the critical contributions of entrepreneurship and discuss how the entrepreneurial policies are not always productive.

4. Concluding remarks

The paper presented results from a bibliometric analysis of innovation and entrepreneurship literature on India from 2000 to 2018. Following the rising trend in the literature from the year 2010 and constant increase in the last five years, indicates how innovation and entrepreneurship are becoming an emerging field of research interest for scholars. Given, that several initiatives and policy measures have been undertaken by the government of India in the last four to five years for promoting innovation and entrepreneurship in the country in the form of Start-up India, Make in India, Atal Innovation Mission, Biotechnology Industry Research Assistance Council (BIRAC), Digital India, National Skill Development Mission, and so on will only make the studies in this field increase more in the future. In authorship patterns, we can see that the joint-authored papers are almost two-thirds of the total output in this field. Though, Indian institutes like IISc, IIM and IIT are dominating research in this field, there are contributions from other Indian institutes also. Joint collaboration among Indian and foreign practitioners and scholars is indicative of a growth of specialisation where collaborations among diverse skills are happening. Moreover, the number of countries participating to study innovation and entrepreneurship in India means there is a growing interest among scholars from around the world to study the India specific innovations and their diffusions (Prabhu and Jain, 2015). The publication sources revealed that there are many journals in social sciences, business and management categories which are productive and interested in publishing studies on India. The nature of diverse journals from pure sciences to social sciences indicates that not only the development and design of innovations is being published but studies on social implications of innovation and entrepreneurship are also being published. This paper has certain limitations as it has considered publications which are indexed in Scopus. However, in future studies, one can also look for sources such as Web of Sciences, Google Scholar, EBSCO and SSRN. Nevertheless, this paper has contributed by highlighting the growth of studies in the field of innovation and entrepreneurship in the Indian context. The results can be used by future studies in this area as a starting point to highlight the nature of this research area. Drawing upon these findings it is possible for concluding that innovation and entrepreneurship as a theme is maturing.

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Misra A.-M.	"Business culture" and entrepreneurship in British India, 1860-1950	2000
Miller D., Hope C.	Learning to lend for off-grid solar power: policy lessons from World Bank loans to India, Indonesia and Sri Lanka	2000
Bresnahan T., Gambardella A., Saxenian A.	"Old economy" inputs for "new economy" outcomes: cluster formation in the New Silicon Valley	2001
Gyawali D., Dixit A.	Water and science: hydrological uncertainties, developmental aspirations and uningrained scientific culture	2001
Bowonder B.	Globalisation of R&D: the Indian experience and implications for developing countries	2001
Clancy J.	Barriers to innovation in small-scale industries: case study from the briquetting industry in India	2001
Mehra K.	Entrepreneurial spirit of the Indian farmer	2002
Kharbanda V.P.	Learning organisations: the process of innovation and technological change	2002
Suresh Kumar S.	Strategic alliances and entrepreneurship in innovation diffusion and technology management – the emergent paradigm	2002
Mehta D., Joshi B.	Entrepreneurial innovations in Gujarat	2002
Kumar V., Jain P.K.	Commercialising new technologies in India: a perspective on policy initiatives	2002
Hutubessy R.C.W., Hanvoravongchai P., Edejer T.T.-T.	Diffusion and utilisation of magnetic resonance imaging in Asia	2002
Buss T.F.	Emerging high-growth firms and economic development policy	2002
Ojha A.K., Krishna S.	Originative innovation and entrepreneurship in the software industry in India	2003
Mehra K.	Regional Innovations and the Economic Competitiveness in India	2003
Chandra P., Srivastav S., Shah B.	Innovation, incubation and incubator	2003
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Wani V.P., Garg T.K., Sharma S.K.	Developing a techno entrepreneurial workforce for effective technological innovation: its necessity for the sustainable development of SSEs in India	2003
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George G., Prabhu G.N.	Developmental financial institutions as technology policy instruments: Implications for innovation and entrepreneurship in emerging economies	2003
Mukherjee T., Jha B., Seshadri D.V.R., Tripathy A.	Innovation and intrapreneurship through re-invention for sustainable competitive advantage: the case of Tata Steel	2004
Yashiro H.	Successful collaboration model of Japan and Russia	2004
Jauhari V.	Corporate entrepreneurship: an insight from Indian electrical and electronics sector	2004
Sunder R.	Pain and excitement of taking technology to the market	2004
Richards J.E.	Clusters, competition, and "global players" in ICT markets: the case of Scandinavia	2004
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Authors	Title	Year
Momaya K., Bardeja K.	Financing ventures in India and colon; needs, ground reality and challenges	2005
Dixon P., Tooley J.	The regulation of private schools serving low-income families in Andhra Pradesh, India	2005
(No author name available)	Technical textiles: reap profits [...] through innovations	2005
Bala Subrahmanya M.H.	Pattern of technological innovations in small enterprises: a comparative perspective of Bangalore (India) and Northeast England (UK)	2005
Prasad V.C.S., Ganvir V.	Study of the principles of innovation for the BOP consumer – the case of a rural water filter	2005
Hindle K., Lansdowne M.	Brave Spirits on New Paths: towards a Globally Relevant Paradigm of Indigenous Entrepreneurship Research	2005
Bala Subrahmanya M.H.	Technological innovations in Indian engineering industry: industry and firm-level case studies	2005
Saxby R.	Ideas stimulate innovation	2006
Seshadri D.V.R., Tripathy A.	Innovation through intrapreneurship: the road less travelled	2006
Narayanan S.S.	New developments in biotechnology and future of cotton improvement	2006
Tschannen P.	Organic cotton: more than a Niche market!	2007
Terjesen S.	Building a better rat trap: technological innovation, human capital and the Irula	2007
Paul Dana L., Brent Anderson R.	Taos Pueblo: an indigenous community holding on to Promethean values	2007
Bala Subrahmanya M.H.	The process of technological innovations in small enterprises: the Indian way	2007
Mueller J.M.	The tiger awakens: the tumultuous transformation of India's patent system and the rise of Indian pharmaceutical innovation	2007
Manimala M.J., Jose P.D., Thomas K.R.	Organisational support systems for innovation and intrapreneurship: a comparative analysis of innovative cases from R&D centres and operating departments of large corporations	2007
Surie G., Torras M.	The co-evolution of technology and entrepreneurship: lessons for development from India and Korea	2007
Babbar P., Chandhok S.	Indian knowledge commission: a transformation to knowledge economy	2008
Jaware R.R., Wani V.P., Pandey M.K.	Fostering entrepreneurship through technical education for sustainable growth of small and medium enterprises in India	2008
Suntharasaj P., Kocaoglu D.F.	Enhancing a country's competitiveness through "national talent management framework"	2008
Anderson J.	Developing a route to market strategy for mobile communications in rural India: an interview with Gurdeep Singh, Operations Director, Uttar Pradesh, Hutch India	2008
Bhidé A.	The venturesome economy: how innovation sustains prosperity in a more connected world	2008
Bhidé A.	The venturesome economy: how innovation sustains prosperity in a more connected world	2008
Ernst D.	Upgrading through innovation in a small network economy: insights from Taiwan's IT industry	2008
Huang Y.	Should Mumbai learn from Shanghai?	2008
Sud de Surie G.	Knowledge, organisational evolution, and market creation: the globalisation of Indian firms from steel to software	2008
Malhotra P.	The impact of TRIPS on innovation and exports: a case study of the pharmaceutical industry in India	2008
Parkes D.	Value-addition in the textile supply chain	2008

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Gereffi G., Wadhwa V., Rissing B.E.N., Ong R.	Getting the numbers right: International engineering education in the USA, China and India	2008
McManus J., White D., Botten N.	Managing global business strategies: a twenty-first century perspective	2008
Jain G.R., Ahluwalia R.	Marketing communications industry: entrepreneurial case studies	2008
Mukhopadhyay S., Singh B.	Distributed generation – basic policy, perspective planning and achievement so far in India	2009
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Ekman S., Ekman A.	Designing an entrepreneurial mind-set in engineering and management	2009
Murthi K.R.S.	Indian space endeavours as an instrument of promoting enterpreneur ship	2009
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Chand V.S.	Beyond nongovernmental development action into social entrepreneurship	2009
Bala Subrahmanya M.H.	Nature and strategy of product innovations in SMEs: a case study-based comparative perspective of Japan and India	2009
Jalan R., Kumar V.	Eye on the Indian market	2009
Choi E.K.	Entrepreneurial leadership in the Meiji cotton spinners' early conceptualisation of global competition	2009
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Khavul S., Peterson M., Mullens D., Rasheed A.A.	Going global with innovations from emerging economies: investment in customer support capabilities pays off	2010
Gogan J.L., Rao A.	Barcodes, RFIDS, lemonade and conversation	2010
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Dhodapkar P., Gogoi A., Medhi A.	Innovation system linkages in Indian hydrocarbon sector	2010
Baporikar N.	Knowledge management and entrepreneurship cases in India	2010
Saha B.	Institutional innovation and entrepreneurial deployment of a software product: case of financial technologies group in India	2010
Krishnaswamy K.N., Bala Subrahmanya M.H., Mathirajan M.	Process and outcomes of technological innovations in electronics industry SMEs of Bangalore: a case study approach	2010
Upadhyay V.K., Sikka P., Abrol D.K.	Technology dissemination programmes and extramural R&D support in India	2010
Kumar R.	Why institutional partnerships matter: a regional innovation systems approach to making the ICT for development projects more successful and sustainable	2010
Tippu S.	"Ideas" could be India's next growth industry	2010
Mathew G.E.	India's innovation blueprint: how the largest democracy is becoming an innovation super power	2010
Joshi M.	Embracing competitive renaissance by steering innovation velocity	2010
Mohan S., Bhat N., Pratap R., Jamadagni H.S., Shivashankar S.A., Ananthasuresh G.K., Venkataraman V., Vinoy K.J.,	Centres of excellence in nanoelectronics in India	2010

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Chaturvedi S.	Emerging Indian entrepreneurship in biotechnology and National Innovation System: exploring linkages and prospects	2010
Ramesh G.	Mainstreaming an unorganised industry: the case of Suguna poultry	2010
Ray P.K., Ray S.	Resource-constrained innovation for emerging economies: the case of the Indian telecommunications industry	2010
Landes D.S., Mokyr J., Baumol W.J.	The invention of enterprise: entrepreneurship from ancient Mesopotamia to modern times	2010
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Bal G., Judge P.S.	Innovations, entrepreneurship and development: a study of the scheduled castes in Punjab	2010
Athreye S., Hobday M.	Overcoming development adversity: how entrepreneurs led software development in India	2010
Rocchi S., Kulkarni U.	Philanthropy by design: Chulha-healthy, indoor cooking	2010
Bhattacharya S.	Innovation in India: a Path to knowledge economy	2011
Ekman S., Ekman A., Salunkhe U., Agarwal A.	Design inspired innovation for rural India	2011
Wong P.K.	Academic entrepreneurship in Asia: the role and impact of universities in national innovation systems	2011
Madan A.K., Mishra R.S.	Ranking of engineering colleges based on statistical method and survey analysis to assess the quality in technical education	2011
Surie G.	The emergence of new markets, distributed entrepreneurship and the university: fostering development in India	2011
Arnold D., Dewald E.	Cycles of empowerment? the bicycle and everyday technology in colonial India and Vietnam	2011
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Athreye S.	Overcoming adversity in entrepreneurship-led growth	2011
Mani S.	Promoting knowledge-intensive entrepreneurship in India	2011
Szirmai A., Naudé W., Goedhuys M.	Entrepreneurship, innovation and economic development	2011
Prasad U.C., Suri R.K.	Modelling of continuity and change forces in private higher technical education using total interpretive structural modelling (TISM)	2011
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Kokkranikal J., Morrison A.	Community networks and sustainable livelihoods in tourism: the role of entrepreneurial innovation	2011
Billore S.	Female immigrant entrepreneurship: Exploring international entrepreneurship through the status of Indian women entrepreneurs in Japan	2011
(No author name available)	Preparing for the field: making the most of experiential learning	2011
Kharbanda V.P.	Academician to entrepreneur: impact of globalisation on science and technology policies in China and India	2011
Subrahmanya M.H.B., Kumar R.S.	Technological innovations and energy intensity of machine tool SMEs in Bangalore: do process innovations contribute to energy efficiency?	2011
Bhardwaj B.R., Sushil, Momaya K.	Drivers and enablers of corporate entrepreneurship: case of a software giant from India	2011
Kohli H.S., Sharma A., Sood A.	Asia 2050: realizing the Asian century	2011

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Dash M.K., Patwardhan M., Verma S.K.	Malls for rural entrepreneur in India: an ICT innovation approaches in emergingng Hariyali Kisaan Bazaar	2011
Halemane D.M., Janszen F.	Business model innovation for entrepreneurs	2012
Széll G.	Social innovation, social entrepreneurship and development	2012
Singh P., Desai P.N.	Foresight activities in the Indian biotechnology firms	2012
Singh R., Gupta V., Mondal A.	Jugaad from “Making Do” and “Quick Fix” to an Innovative, sustainable and low-cost survival strategy at the bottom of the pyramid	2012
Sharma P., Kakoti A.	Aravind eye hospital	2012
Meyer R.H.	A review and analysis of a selection of India’s innovation, entrepreneurship, knowledge management and technology policy literature	2012
Hillemane B.S.M.	External support and innovation performance of SMEs in Bangalore: role of firm-level factors	2012
Lynn L., Meil P., Salzman H.	Reshaping global technology development: innovation and entrepreneurship in China and India	2012
Banerjee A., Singh A., Kumar P.	Assessing bodystorming simulators for healthcare design and innovation: rehabilitation professionals’ perspective	2012
Rezaie R., McGahan A.M., Frew S.E., Daar A.S., Singer P.A.	Emergence of biopharmaceutical innovators in China, India, Brazil and South Africa as global competitors and collaborators	2012
Pant L.P.	Learning and innovation competence in agricultural and rural development	2012
Javalgi R.G., Todd P.R., Johnston W.J., Granot E.	Entrepreneurship, muddling through, and Indian internet-enabled SMEs	2012
Sonne L.	Innovative initiatives supporting inclusive innovation in India: social business incubation and micro venture capital	2012
Ramani S.V., SadreGhazi S., Duysters G.	On the diffusion of toilets as bottom of the pyramid innovation: lessons from sanitation entrepreneurs	2012
Vinayagasundaram R., Nedunchezian V.R.	Application of modern technology in foundries and its impact on productivity and profitability	2012
Landes D.S., Mokyr J., Baumol W.J.	The invention of enterprise: entrepreneurship from ancient Mesopotamia to modern times	2012
Surie G.	The university as a catalyst of innovation, entrepreneurship and new markets in the Indian system of innovation	2012
Radharamanan R., Juang J.-N.	Innovation and entrepreneurship in engineering education at MUSE	2012
Montelegre R.	A process model of government intervention and capability development: lessons from the technology cluster formation in Hyderabad, India	2012
Annamalai T.R.	A lifecycle analysis of VC-PE investments in India: half full or half empty?	2012
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Gupta V.K., Gupta B.	Flexible strategic framework for managing innovation and technology from perspective of continuity and change: a study of auto ancillary SMEs in India	2013
Zhu W., Xue H.	Empirical study on the influential factors of sustainable innovation of innovation-oriented enterprises under dynamic environment	2013
Boruah D., Kakati V., Das A.K.	Indigenous product development based on contextual innovation and link to market	2013
Prakash O., Mathur A.	Integrated and corporate learning in higher education: challenges and strategies	2013
Mudliar P., Pal J.	ICTD in the popular press: media discourse around Aakash, the “world’s cheapest tablet”	2013
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Wang Z., Xie P., Wu Z.	Disruptive Innovation in Chinese and Indian businesses: the strategic implications for local entrepreneurs and global incumbents	2013
Bala Subrahmanya M.H.	External support, innovation and economic performance: what firm-level factors matter for high-tech SMEs? How?	2013
Sundaramurthy C., Musteen M., Randel A.E.	Social value creation: a qualitative study of indian social entrepreneurs	2013
Bala Subrahmanya M.H.	Why do only some SMEs achieve external support for better innovation performance: empirical evidence from Bangalore, India	2013
Raza M.H., Raza I.	Echnological management and modern telecommunication market place	2013
Sinha N., Srivastava K.B.L.	Association of personality, work values and socio-cultural factors with intrapreneurial orientation	2013
Kumar N.	The importance of human capital in the early internationalisation of Indian knowledge-intensive service firms	2013
Farrell S., Rucinski A.	A service science context in education driven by disruptive innovation and the Internet of Things	2013
Deshpande M., Baporikar N.	Business policy of pune auto component smes a case approach	2013
Tang M., Baskaran A., Pancholi J., Lu Y.	Technology business incubators in China and India: a comparative analysis	2013
Antholis W.	Inside out, India and China: local politics go global	2013
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Gupta R., Pandit A.	Innovation and growth of small and medium enterprises: role of environmental dynamism and firm resources as moderating variables	2013
Li P.P.	Disruptive innovation in Chinese and Indian businesses: the strategic implications for local entrepreneurs and global incumbents	2013
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Kumar N., Yakhlef A.	How capabilities evolve in a born global firm? A case study of an Indian knowledge-intensive service born global firm	2014
Heyden N.S.	India: issues for sustainable growth/innovation for sustainability	2014
Srinivasan R.	Strategic business decisions: a quantitative approach	2014
Prasad Mohanty R., Augustin P.	Business strategy of automotive and farm equipment sector of the Mahindra & Mahindra Group of India	2014
Dash M.K.	Corporate social responsibility (CSR) and entrepreneurship in India: exploring the landscape of possibilities	2014
Han J.-W., Lim H.-S.	Strategic analysis and success factors of the enterprises through the convergence	2014
Singhania R.R., Madduru D., Pappu P., Panchangam S., Suravajhala R., Chandrasekharan M.	The Making of the Women in Biology Forum (WiB) at Bioclues	2014
Priya V.	Entrepreneurship in biotechnology and career development	2014
Premkumar B., Kalpana B., Priya K.	Entrepreneurship in emerging economies: global lessons, success stories from India	2014
Borah R.R., Palit D., Mahapatra S.	Comparative analysis of solar photovoltaic lighting systems in India	2014
Chand V.S.	Socio-educational entrepreneurship within the public sector: leveraging teacher-driven innovations for improvement	2014
Desa G., Koch J.L.	Scaling social impact: building sustainable social ventures at the base-of-the-pyramid	2014

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Warnecke T.	Are we fostering opportunity entrepreneurship for women? Exploring policies and programmes in China and India	2014
Hecht B.A., Jouttenus T.T., Jouttenus M.J., Werner J., Raskar R., Khandbahale S.S., Bell P.	The kumbhthon technical hackathon for Nashik: a model for STEM education and social entrepreneurship	2014
Bhat J.M., Shroff B.P.	Entrepreneurial value creation in the cloud: exploring the value dimensions of the business model	2014
Borozan D., Pfeifer S.	Exploring entrepreneurs' motivation: comparison of Croatia, European post-socialist and developed countries	2014
Thakur A., Jasrai L.	A study on integrated, innovative and inclusive (3I) framework for telecom services in Rural India	2014
Balakrishnan P., Thivya Gopalan S., Priyadarsini P.	Status of women intrapreneurs in Indian society	2014
Stoddart B.	Land, water, language and politics in Andhra: regional evolution in India since 1850	2014
Krishnaswamy K.N., Mathirajan M., Bala Subrahmanya M.H.	Technological innovations and its influence on the growth of auto component SMEs of Bangalore: a case study approach	2014
Kiron K.R., Kannan K.	An investigation on the innovations in steel re-rolling MSMEs with reference to industries in Kerala State, India	2014
Wong P.-K., Ho Y.-P., Singh A.	Towards a "global knowledge enterprise": The entrepreneurial university model of the National University of Singapore	2014
Gupta V., Gupta B.	Flexible strategic framework for managing innovation from perspective of continuity and change: a study of SMEs in India	2014
Abrol D., Gupta A.	Understanding the diffusion modes of grassroots innovations in India: a study of Honey Bee Network supported innovators	2014
Jain S., Nair A., Ahlstrom D.	Introduction to the special issue: towards a theoretical understanding of innovation and entrepreneurship in India	2015
Prabhu J., Jain S.	Innovation and entrepreneurship in India: understanding jugaad	2015
Bhoganadam S.D., Rao D.S.	A study on socio-cultural factors influencing Indian entrepreneurship: a critical examination	2015
Mysore S.	Technology commercialisation through licensing: experiences and lessons – a case study from Indian horticulture sector	2015
Joshi K., Sharma V., Mittal S.	Social entrepreneurship through forest bioresidue briquetting: an approach to mitigate forest fires in Pine areas of Western Himalaya, India	2015
Bala Subrahmanya M.H.	Innovation and growth of engineering SMEs in Bangalore: why do only some innovate and only some grow faster?	2015
Gupta S., Yadav G., Choudhary A., Kaur A.	Emergent trends in sustainable technologies in Thailand: developing OTOP-based manufacturing capabilities in rural India	2015
Joshi M., Srivastava A.	Enhancing dynamic capability: a case of Microlit	2015
Srivastava S.C., Shainesh G.	Bridging the service divide through digitally enabled service innovations: evidence from Indian healthcare service providers	2015
Prakash D., Jain S., Chauhan K.	Entrepreneurial intensity in relation to presence of entrepreneurship development cell: a study of institutes offering professional courses in national capital region Delhi, India	2015
Hampel-Milagrosa A., Loewe M., Reeg C.	The entrepreneur makes a difference: evidence on mse upgrading factors from Egypt, India and the Philippines	2015
Kaufman R., Avgar A., Mirsky J.	Opportunities for sustainable community development in the wake of disaster situations: lessons from the field	2015
Sandeep M.S., Ravishankar M.N.	Social innovations in outsourcing: an empirical investigation of impact sourcing companies in India	2015
George G., Rao-Nicholson R., Corbishley C., Bansal R.	Institutional entrepreneurship, governance and poverty: insights from emergency medical response services in India	2015

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Wakkee I., Van Der Veen M., Eurlings W.	Effective growth paths for SMEs	2015
Gopakumar G.	Who will Decongest Bengaluru? Politics, Infrastructures and Scapes	2015
Basu P., Prasad N., Reddy R., Rath U.	Business incubation for fostering innovation in space commerce: an Indian perspective	2015
Jolly S., Raven R.P.J.M.	Collective institutional entrepreneurship and contestations in wind energy in India	2015
Majumdar S., Guha S., Marakkath N.	Technology and innovation for social change: an introduction	2015
Backer P.R., Chung W.R.	Global technology experiences for upper division engineering students: an assessment	2015
Yeung S.M.C.	A mindset of entrepreneurship for sustainability	2015
Majumdar S., Guha S., Marakkath N.	Technology and innovation for social change	2015
Gandhi S.J., Robb C., Hope T., Wilson M., Hecht D., Hofbauer G., Jattke A., Vijayraghavan V.	Development of a tool to evaluate innovation practices and entrepreneurship in an international context	2015
Batra S., Sharma S., Dixit M.R., Vohra N.	Strategic orientations and innovation in resource-constrained smes of an emerging economy	2015
Melles G., Kuys B., Kapoor A., Rajanayagam J., Thomas J., Mahalingam A.	Designing technology, services and systems for social impact in the developing world: strong sustainability required	2015
Khalil T.M.	A model of a research and entrepreneurial university for developing nations: the case of Nile University	2015
Rajan P.	Not engineering to help but learning to (un)learn: integrating research and teaching on epistemologies of technology design at the margins	2015
Sargent M.	Scientists as free riders: natural resource exploration and new product discovery in the Dutch East India Company	2015
Arul Paramanandam D., Packirisamy	An analytical study on micro-entrepreneurs and the role of Tamil Nadu corporations for Women development with reference to self-help groups	2015
Tan K.G., Tan K.Y.	Foreign direct investment and small and medium enterprises: productivity and access to finance	2015
Grace Padma C., Thangavelu A.	Enhanced data mining techniques for improving the women entrepreneurs quality of service	2015
Singh A., Suman T., Thripura V.	Interfaces and synergies between intellectual property rights and consumer protection law in India: an analysis	2015
Singh A., Majumdar S.	Technology and innovation for creating social change: concepts and theories	2015
Sarkar S.	Domesticating electric power: growth of industry, utilities and research in colonial Calcutta	2015
Bhattacharyya M.K.R., Bhattacharyya M.	Development of an innovative eco-friendly rice puffing machine for modernising a traditional cottage industry	2016
Sashi Kumar V., Paul V.K., Sathasivam K.	Innovating affordable neonatal care equipment for use at scale	2016
Pramila Devi M., Ramachandran S.	Training and skill development activities for MSMEs in India	2016
Casson C.	Creative enterprise from the medieval to the modern period: Alternative perspectives	2016
Mazumdar-Shaw K.	Using the power of biotechnology to deliver affordable healthcare: Biocon's innovation mission in India	2016
Gupta A.K., Dey A.R., Shinde C., Mahanta H., Patel C., Patel R., Sahay N., Sahu B., Vivekanandan P., Verma S., Ganesham P., Kumar V., Kumar V., Patel M., Tole P.	Theory of open inclusive innovation for reciprocal, responsive and respectful outcomes: coping creatively with climatic and institutional risks	2016

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Hukampal S.S., Bhowmick B.	Innovation network for entrepreneurship development in rural Indian context: exploratory factor analysis	2016
Batra S., Vohra N. Momaya K.S.	Planning as a means to innovation in entrepreneurial firms in India City clusters and break-out in corporate competitiveness: patterns and perspectives focusing on innovation capabilities and India	2016 2016
Baskaran S., Mehta K.	What is innovation anyway? Youth perspectives from resource-constrained environments	2016
Gupta H., Barua M.K.	Identifying enablers of technological innovation for Indian MSMEs using best-worst multi-criteria decision-making method	2016
Joelle Dountio O.	The Indian protection and utilisation of public-funded intellectual property bill, 2008: Does it secure access to medicines?	2016
Avinash Shivdas P., Chandrasekhar J.	Sustainability through frugal innovations: an application of Indian spiritual wisdom	2016
Bello D.C., Radulovich L.P., Javalgi R.G., Scherer R.F., Taylor J.	Performance of professional service firms from emerging markets: role of innovative services and firm capabilities	2016
Woodside A.G., Bernal P.M., Coduras A.	The general theory of culture, entrepreneurship, innovation, and quality-of-life: comparing nurturing vs thwarting enterprise startups in BRIC, Denmark, Germany and the United States	2016
Gurca A., Ravishankar M.N.	A bricolage perspective on technological innovation in emerging markets	2016
Leitão J., Pereira D.	Absorptive capacity, coepetition and product innovation: a comparative analysis between Italian and Portuguese service firms	2016
Ahmadi H., O'Cass A.	The role of entrepreneurial marketing in new technology ventures first product commercialisation	2016
Soni P.	Innovation and entrepreneurship in the informal economy: insights from the ground zero	2016
Dutta S.	Entrepreneurship and socio-cultural factors	2016
Das D.K.	Engendering creative city image by using information communication technology in developing countries	2016
Sarva M., Dubey P., Kashyap S.	Startups can be the game changer for Indian economy	2016
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