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Mapping the Intellectual Structure of Social Entrepreneurship Research: A Citation/Co-citation Analysis

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Abstract

In this paper, we employ bibliometric analysis to empirically analyse the research on social entrepreneurship published between 1996 and 2017. By employing methods of citation analysis, document co-citation analysis, and social network analysis, we analyse 1296 papers containing 74,237 cited references and uncover the structure, or intellectual base, of research on social entrepreneurship. We identify nine distinct clusters of social entrepreneurship research that depict the intellectual structure of the field. The results provide an overall perspective of the social entrepreneurship field, identifying its influential works and analysing scholarly communication between these works. The results further aid in clarifying the overall centrality features of the social entrepreneurship research network. We also examine the integration of ethics into social entrepreneurship literature. We conclude with a discussion on the structure and evolution of the social entrepreneurship field.

Keywords Social entrepreneurship · Business ethics · Bibliometric analysis · Citation analysis · Co-citation analysis · Intellectual structure

Introduction

Social entrepreneurship, defined as solving social problems using market-based methods, has gained in popularity over the past two decades and is increasingly acknowledged as a practice that can create both economic and social value (Christie and Honig 2006; Dees et al. 2002; Harding 2004; Mair and Marti 2006; Rey-Marti et al. 2016). The pressing need to address the numerous global social and environmental challenges of the twenty-first century (Marti and Mair 2009), coupled with the growing legitimacy of market-based methods (Dart 2004), has led to the emergence of social entrepreneurship and increasing interest in the topic by policymakers, practitioners (Wilson and Post 2013), and academic researchers (Nicholls 2006; Weerawardena and Mort 2006).

Scholars from a variety of disciplines, such as entrepreneurship (Chell et al. 2010; Corner and Ho 2010), sociology (Kriauciunas et al. 2011), ethics (Cornelius et al. 2008), psychology (Chand and Misra 2009), and politics and institutions (Dey and Steyaert 2010; Hemerijck 2002), engage in social entrepreneurship research. This is evidenced by an exponential increase in the number of publications on social entrepreneurship in a variety of scholarly journals (Newbert 2014; Rey-Marti et al. 2016; Sassmannshausen and Volkmann 2018). At this stage in the growth of the social entrepreneurship field, the need exists to synthesize and reflect on the existing literature, as "it is useful to stop occasionally, take inventory for the work that has been done, and identify new directions and challenges for the future" (Low and MacMillan 1988, p. 139). This type of analysis

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is particularly crucial for an emerging field such as social entrepreneurship, as it can help shape the future of the field, based on the foundations of previous works, and contribute to the constructive development of the discipline.

Numerous previously conducted review studies on social entrepreneurship have contributed significantly to our understanding of the field. However, most of these studies focus only on clarifying the concept of social entrepreneurship by reviewing the definitions and contrasting it with other forms of entrepreneurship (e.g. Austin et al. 2006; Bacq and Janssen 2011; Chell 2007; Choi and Majumdar 2014; Dacin et al. 2010, 2011; Galera and Borzaga 2009; Haugh 2005; Mair and Marti 2006; Peredo and McLean 2006; Thompson 2008). Many key questions have not yet been answered, such as how the field of social entrepreneurship research is evolving, which themes are being studied under the banner of social entrepreneurship, which management areas social entrepreneurship research is addressing, and which key articles have influenced the field and what is the relationship among the key articles.

In this article, we address these shortcomings and complement the existing literature by conducting a quantitative review of social entrepreneurship research. By specifically employing citation, document co-citation, and network analysis, we provide the complete "intellectual structure" or "knowledge base" (White and Griffith 1981) of the social entrepreneurship field on the basis of criteria such as subject areas and schools of thought (Calabretta et al. 2011). Researchers tend to cluster into informal networks, or "invisible colleges," focusing on examining common questions with common frames (Culnan 1987; Price 1963). These invisible colleges provide a basis for the development of a discipline and can be analysed through scientific article citations (Calabretta et al. 2011). By analysing the invisible colleges across time periods, one can delineate the evolution of a field.

Further, existing review studies have not attempted to synthesize the integration of ethics in the domain of social entrepreneurship. Early research on social entrepreneurship presumed that "because something is socially oriented, the motivation is likely to be ethically sound; that it is principled, morally justified and ethically legitimate" (Chell et al. 2016, p. 621). However, this position was subsequently challenged by scholars, who argued that the ethics of social enterprises (SEs) must be critically examined in the same manner as other organizations. This is crucial because social does not necessarily equate to ethical. This difference led to the publication of a special issue on the intersection between social entrepreneurship and ethics in the *Journal of Business Ethics* in 2016 (Chell et al. 2016). As the recent work suggests, SEs are not free from ethical issues, and various ethical challenges are involved in social entrepreneurship as well. For instance, Dey and Steyaert (2016) argue that ethics in social entrepreneurship is emergent in nature and is shaped by social action that struggles with power, subjectivity, and freedom. On a similar note, Andre and Pache (2016) contend that SEs face multiple ethical challenges when they attempt to scale up their operations because in the process, they run the risk of abandoning their ethics of care. Hence, it is useful to understand the degree to which social entrepreneurship research has considered the ethical dimension. As such, we attempt to achieve the following four objectives in this study:

1. To identify key documents that significantly contribute to the social entrepreneurship field,
2. To understand the evolution of the social entrepreneurship field by identifying the linkages among the key documents and the evolution of these linkages over time,
3. To capture the level of centralization of the social entrepreneurship field, and
4. To examine the integration of ethics into social entrepreneurship literature

These objectives, taken together, help to map the "intellectual structure" of the social entrepreneurship field and explain the integration of ethics into the field.

To achieve the above four research objectives, we conducted a bibliometric analysis of 1296 articles and 74,237 corresponding cited references. As part of our data analysis, we conducted a citation analysis, a co-citation analysis, and a network analysis. With the citation analysis, we identified 109 top-cited articles that have strongly influenced the social entrepreneurship field. In the co-citation analysis, we identified nine distinct clusters representing the intellectual structure of the social entrepreneurship field. Finally, our network analysis delineates the relationship between the frequently cited documents. While few articles are highly cited, we find, overall, a low network centrality, which indicates a relative dispersion of power in the field. Our analysis highlights the progressive evolution of the social entrepreneurship field and the emergence of interesting patterns among the highly influential papers in the area.

Our study contributes to the field in at least four ways. First, by presenting a complete assessment of scholarly contribution in the social entrepreneurship field and identifying linkages among classic contributions, the study contributes to the understanding of the intellectual structure of the social entrepreneurship field. Second, for an emerging field such as social entrepreneurship that is influenced by the work of authors from multiple disciplines, it is critical to periodically review its evolutionary path (Nerur et al. 2008). Third, the analysis of document co-citation patterns demonstrates the social construction of the field at a particular time. Finally, our article explores the linkages between social entrepreneurship and business ethics.

The remainder of this article is structured as follows. We begin with a discussion of existing review studies in the social entrepreneurship field and demonstrate how our work extends previous findings. We next discuss the process of bibliometric analysis, the merits of this approach, and its applicability across research areas. We subsequently discuss in detail the methodology adopted in this article before presenting and discussing the results. Finally, we highlight our key conclusions regarding the state of social entrepreneurship research, discuss the limitations of this work, and provide directions for future research.

Published Review Studies in Social Entrepreneurship

In nearly two decades of research, many literature review studies have been published on SE. Table 1 presents a representative list of these studies. However, the majority of review studies focus only on clarifying the concept of social entrepreneurship by reviewing the definitions and contrasting it with other forms of entrepreneurship (e.g. Austin et al. 2006; Bacq and Janssen 2011; Chell 2007; Choi and Majumdar 2014; Dacin et al. 2010, 2011; Galera and Borzaga 2009; Haugh 2005; Mair and Marti 2006; Peredo and McLean 2006; Thompson 2008). For instance, Dacin et al. (2010) identify as many as 37 definitions of social entrepreneurship or entrepreneurs in the literature and argue for defining social entrepreneurship based on its social mission and outcomes. The authors further contend that researchers should explore social entrepreneurship as a unique context rather than attempting to differentiate it from other forms of entrepreneurship. Similarly, Mair and Marti (2006) offer a working definition of social entrepreneurship and highlight the distinctiveness of the social entrepreneurship context. They note that social entrepreneurship could be a "fascinating playground for different theories and literatures" (p. 37). Only a handful of review studies have attempted to examine the social entrepreneurship field as a whole (Grandos et al. 2011; Rey-Marti et al. 2016; Sassmannshausen and Volkmann 2018; Short et al. 2009). These studies have generally conducted basic citation and content analysis, focusing on aspects such as the annual publication productivity of social entrepreneurship research, the academic domains that study social entrepreneurship research, and the methodology and epistemological orientation of papers on SE.

These previous review studies have significantly contributed to the understanding of the social entrepreneurship discipline and have identified a number of future research directions. First, many have highlighted the need to look beyond the definitional debate and focus on the application and testing of theories in the context of social entrepreneurship (e.g. Bacq and Janssen 2011; Dacin et al. 2010; Galera and Borgaza 2009; Mair and Marti 2006; Short et al. 2009). In particular, some studies have highlighted the need to apply theories such as contingency theory, institutional theory, and resource dependence theory when studying SE. Second, some studies have highlighted the need to examine additional areas of social entrepreneurship, such as resource mobilization challenges (Austin et al. 2006; Certo and Miller 2008; Doherty et al. 2014; Haugh 2005), characteristics of social entrepreneurs (Certo and Miller 2008; Choi and Majumdar 2014; Dacin et al. 2011), challenges regarding SE hybridity (Bacq and Janssen 2011; Doherty et al. 2014), and SE performance measurement (Austin et al. 2006; Choi and Majumdar 2014; Haugh 2005). Finally, some studies have highlighted the dominance of qualitative research methodologies in social entrepreneurship research, particularly case research methodology, and have stressed the need for more quantitative studies (Certo and Miller 2008; Lehner and Kaniskas 2013; Short et al. 2009).

By employing methods of citation, co-citation, and network analysis, our quantitative review complements existing review studies. Sassmannshausen and Volkmann (2018) even suggest a full-scale co-citation analysis as a future research direction. By analysing the intellectual linkages among the influential articles in social entrepreneurship over time, we provide a complete intellectual map of the social entrepreneurship field. We also throw light on how the social entrepreneurship field has evolved and how much of future research areas identified in past reviews have been addressed.

Methods

Bibliometric analyses are objective, quantitative methods used to determine the intellectual structure of scientific fields of study (Garfield 1979). Bibliometric methods have received increasing attention in management research areas, such as information systems (Culnan 1986), entrepreneurship (Etemad and Lee 2003; Ratnatunga and Romano 1997; Reader and Watkins 2006; Schildt et al. 2006), family business (Casillas and Acedo 2007), strategy (Acedo et al. 2006), business ethics (Calabretta et al. 2011; Uysal 2010), organization behaviour (Culnan et al. 1990), and human resource management (García-Lillo et al. 2017a). Bibliometric analysis is based on the premise that citations are an effective and reliable proxy for assessing the influence of various publications or authors on an area of research (Culnan et al. 1990; Garfield 1979; Small 1973). Although citation behaviour can be biased by factors such as the accessibility of a particular document or negative citations, citation counts alone can provide an objective measure of the usefulness of a publication (Culnan 1986; Garfield 1979). Moreover, recent research has discovered that negative citations are rare (Case

Table 1 Representative list of review studies on social entrepreneurship

Studies	Type of study	Methodology	Period	Number of papers analysed	Main ideas
Austin et al. (2006)	Qualitative	Literature review	Not mentioned	Not mentioned	Highlights differences between commercial and social enterprises in terms of markets, mission, capital, people and performance
Bacq and Janssen (2011)	Qualitative	Literature review	Not mentioned	Not mentioned	Reviews definition of SE and its conceptualization across geographies
Certo and Miller (2008)	Qualitative	Literature review	Not mentioned	Not mentioned	Reviews definition of SE and suggests future research directions
Choi and Majumdar (2014)	Qualitative	Literature review	Not mentioned	Not mentioned	Argues that SE is an essentially contested concept and hence a unified definition is not possible. Viewing it as a cluster concept will facilitate the development of structured and systematic future research
Dacinet al. (2011)	Qualitative	Literature review	Not mentioned	Not mentioned	Examines the promise of social entrepreneurship as a domain of inquiry and suggests future research areas and a set of research questions
Dacin et al. (2010)	Qualitative	Literature review	Not mentioned	Not mentioned	Differentiates social entrepreneurship from other related areas and suggests future research questions
Doherty et al. (2014)	Qualitative	Structured literature review	Not mentioned	129	Discusses about hybrid nature of social enterprises and the impact of hybridity on management of social mission, financial resource acquisition and human resource mobilization
Galera and Borgaza (2009)	Qualitative	Literature review	Not mentioned	Not mentioned	Emphasizes on the importance of legal recognition of social entrepreneurship for the research advancement of the field
Granados et al. (2011)	Quantitative	Citation analysis	1991–2010	286	Provides intellectual structure of social entrepreneurship field and discusses current maturation of the field based on epistemological orientation
Haugh (2005)	Qualitative	Thematic analysis	Not mentioned	Not mentioned	Categorizes social entrepreneurship research agenda in to eight themes and suggests future area of research
Lehner and Kaniskas (2013)	Qualitative	Content analysis	2005–2011	> 300	Discusses about pre-paradigmatic status of social entrepreneurship research
Mair and Marti (2006)	Qualitative	Literature review	Not mentioned	Not mentioned	Defines social entrepreneurship from process perspective, discusses how sociology and organizational theory can be applied to social entrepreneurship

Table 1 (continued)

Studies	Type of study	Methodology	Period	Number of papers analysed	Main ideas
Rey-Marti et al. (2016)	Quantitative	Citation analysis	1964–2015	2984	Identifies research area with greater research output, country and language responsible for most research in the discipline, journal that publishes most research and most relevant authors in the area
Sassmannshausen and Volkmann (2018)	Quantitative	Citation analysis	1954–2013	20,000	Identifies most cited articles, discusses methodological issues and provides suggestions on overcoming those issues
Short et al. (2009)	Qualitative	Content analysis	1991–2008	152	Classifies article based on type and methodology, Delineates boundary of social entrepreneurship research
Thompson (2008)	Qualitative	Literature review	Not mentioned	Not mentioned	Highlights distinctiveness and linkages among social entrepreneurship, social enterprise and social entrepreneur

and Higgins 2000). Bibliometric analyses are attractive due to their unobtrusive and objective nature (Garfield 1979). Citation counts can be analysed statistically, thereby bringing objectivity to the process. Moreover, since large data sets spanning long periods are analysed, the emerging map neatly captures the field, something that is very difficult to capture using qualitative reviews (Casillas and Acedo 2007).

Citation Analysis

Citation analysis helps to objectively identify influential articles in an area and explore the link between citing and cited articles and the publications containing the citations (Culnan 1987; Culnan et al. 1990; Gundolf and Filser 2013). The frequency of citation denotes the significance of a document, and thus, a frequently cited document conveys notable findings and substantial contributions to the research discipline (Yue and Wilson 2004). Citation analysis helps to examine growth in citations over time and discern when key articles were written and thus track their popularity. Citation counts can also track major direction changes in a field (Pilkington and Meredith 2009).

Document Co-citation Analysis

A widely used method of bibliometric analyses is co-citation analysis (Acedo et al. 2006), which aids in the exploration of the intellectual linkages between the influential articles in a discipline and the mapping of the intellectual structure of the discipline (Calabretta et al. 2011; Culnan 1987; White and Griffith 1981; White and McCain 1998). The co-citation method is based on the number of times that two documents from earlier literature are cited together in a later work (Small 1973). It assumes that the more often two documents are cited together, the closer the relationship between them; hence, they can be considered part of same research field (Culnan 1986; Marshakova 1973; McCain 1990; Small 1973). This relationship indicates only that the documents belong to the same broad research area and not necessary that they agree with each other (Acedo et al. 2006).

While we use documents as the basis of our co-citation analysis,[1] this type of analysis can also be based on authors. Author co-citation analysis, proposed by White and Griffith (1981), measures how often two authors, rather than two documents, are cited together in later articles. Here, "author" refers to the body of writing of a person, not the person himself (White and Griffith 1981). In our study, we use documents instead of authors, as our objective is to map the intellectual structure of a research field (i.e. social entrepreneurship), and the use of authors can distort results, as they may have contributed to more than one research area (Acedo et al. 2006). In addition, author co-citation analysis aggregates all work done by an author as a single unit and hence misses individual contributions made by the same author over a longer period. Also, it overlooks the contributions of co-authors, as only the first author listed for each work is considered for analysis (McCain 1990).

[1] For this article, the methodology used is document co-citation analysis. Hence, all subsequent mentions of co-citation analysis in this article refer to document co-citation.

Social Network Analysis

Social network analysis (SNA), rooted in graph theory, aims to examine the relational traits of social structures (Scott 1991). This method complements citation and co-citation analysis by incorporating the centrality features of the network (Pilkington and Meredith 2009; Uysal 2010). SNA can identify the most prominent actor (documents, in our case) in a network and its relationship with other actors (Wasserman and Faust 1994). Despite being a novel and underdeveloped technique (Johnson and Oppenheim 2007), SNA has been used to understand knowledge network structures across many disciplines (Lee et al. 2008; Pilkington and Meredith 2009; Uysal 2010). Network centrality determines the central position that an actor occupies in a network and indicates its influence, importance, and capacity of accessing other elements within the network (Acedo et al. 2006).

Methods of SNA predominantly use three centrality measures—degree, closeness, and betweenness (Otte and Rousseau 2002). The first measure, degree centrality, considers the number of other network actors that one particular actor is linked with. A greater number of links reflects a better position and a greater degree of autonomy (Acedo et al. 2006; Pfeffer and Salancik 1978). The second measure, closeness centrality, measures an actor's distance from others in the network based on geodesic distances (Uysal 2010). A high degree of closeness indicates that a network actor is related to others through few paths. The third measure, betweenness centrality, reflects the capacity of a network actor to connect with other actors in the network (Cross and Cummings 2004; Debicki et al. 2009). An actor can connect parts of a network that would otherwise not be connected and thus act as a broker (Acedo et al. 2006). A high degree of betweenness centrality signifies that an actor bridges many different actors in the network. We analysed the co-citation network and calculated centrality measures using UCINET software.

Data Collection and Analysis

Selection of Source Documents

Figure 1 summarizes the steps used in our data collection and analysis. Our data were acquired from the Social Sciences Citation Index, available online through the Web of Science (WoS), a database widely used in bibliometric analysis (e.g. Ferreira et al. 2014; Gracia-Lillo et al. 2017a, b). This citation database covers a wide range of leading journals, including nearly 2474 journals in over 50 disciplines. Following earlier SE scholars, we used the keywords "social entre*" and "social venture*" to search the WoS database. We restricted our search to journal articles published in the English language. We selected only journal articles because only these can be considered "certified knowledge," subject to the review process (García-Lillo et al. 2017a). This aids in increasing the reliability of the results and aligns with existing practices in this type of study (Fernandez-Alles and Ramos-Rodríguez 2009; Gracia-Lillo et al. 2017a).

Our search process yielded 1296 documents, which contained a total of 74,237 cited references, with a mean of 57.28 references per paper. These references include many types of documents, such as journal articles, books, doctoral dissertations, reports, and so forth. These 1296 papers were downloaded and imported into Bibexcel (Persson et al. 2009), a software used for analysing bibliometric data (Gracia-Lillo et al. 2017a, b; Zhao et al. 2017). In this paper, Bibexcel was used for citation and document co-citation analysis, VOSviewer for data visualization, SPSS version 21.0 for multivariate analysis, and UCINET for SNA.

The data collected from the WoS database cannot be directly analysed due to inconsistencies related to coding in the raw data. For instance, the name of same author or journal can be represented in multiple ways (e.g. Dacin PA or Dacin P.A.; ACAD MANAGE PERSPECT or ACAD MANAGEMENT PERS). In a few other cases, references to multiple editions of the same book were discovered; for example, there were references to different editions of Bornsteirn's 2007 books. These inconsistencies were corrected manually to increase the accuracy of the data.

Building the Document Co-citation Matrix

The next step in the data collection is to identify the documents that can be included in the analysis, as it is not possible to include all 1296 documents and 74,237 cited references. This difficulty is overcome by selecting only the most influential documents based on frequency of citation. This approach aligns with many prior studies of bibliometric analysis (McCain 1990; Pilkington and Meredith 2009; Schildt et al. 2006). For our analysis, we considered only those documents with 30 or more citations.[2] This resulted in 109 documents being considered for document co-citation

[2] There is no methodological guide available in the literature regarding choosing the threshold point for the number of documents to be analyzed (Eom 2009). This choice depends on the generation of a co-citation matrix that is suited for statistical treatment or graphical illustration. The same argument is expressed in other papers on bibliometric analysis, such as García-Lillo et al. (2017a, p. 1806) and Schildt et al. (2006, p. 401). Few papers have determined the threshold point based on the "stress" values obtained from the multi-dimensional scaling method (e.g. Pilkington and Meredith 2009; Ramos-Rodríguez and Ruiz-Navarro 2004). If the stress value is below a specific value, it can be considered a good fit. Kruskal (1964) recommends interpreting stress values as follows: 0 = perfect; 0.025 = excellent; 0.05 = good; 0.1 = fair; 0.2 = poor. In our case, for a threshold value of 30, we received a stress value of 0.05588, which indicates a good fit.

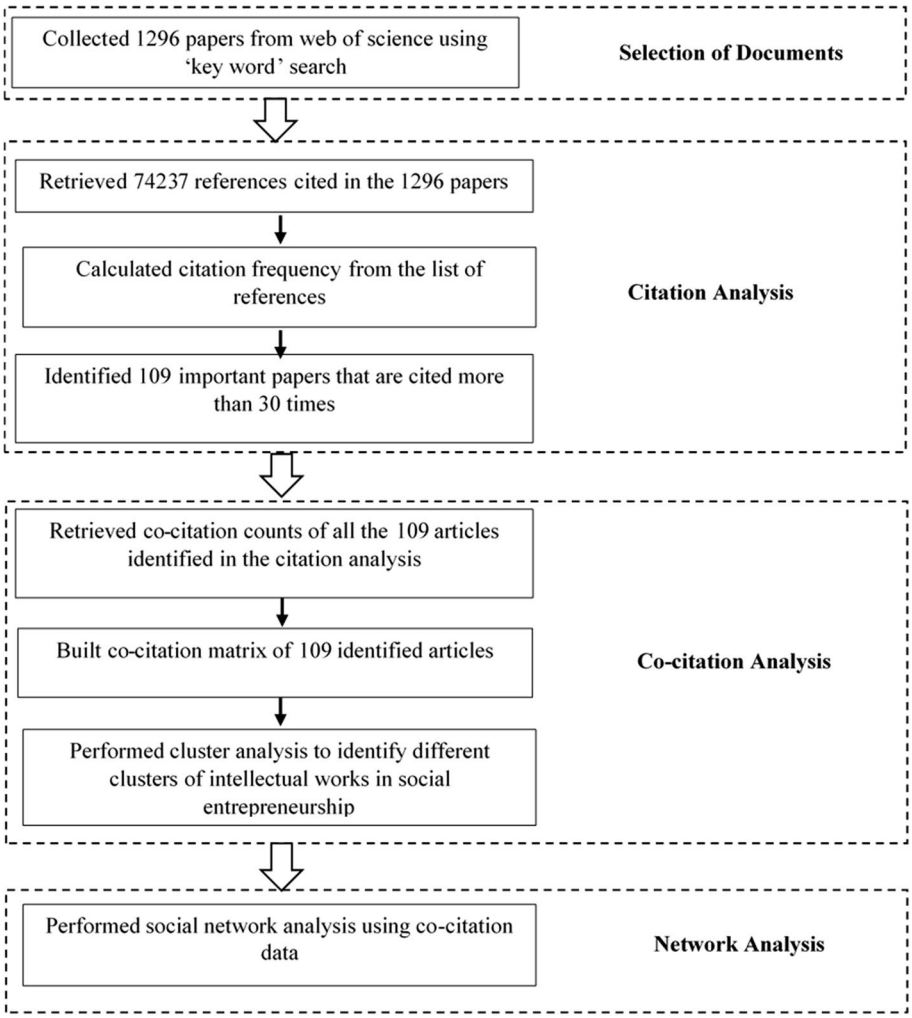

Fig. 1 Design of the empirical study

and multivariate analysis. The online supplement provides a brief description of these 109 documents.

We next created a 109×109 cell square symmetrical matrix, with each cell containing the co-citation count, or the number of times two documents are jointly cited in each of the 1296 documents in our sample. The primary diagonal value in the matrix is zero, as the same paper cannot be cited twice in an article. While various authors treat diagonal values differently, we used White and Griffith's (1981) formula,

$$S = \frac{\text{Total cocitaions of documents } A \text{ and } B}{\text{Total citations of } A + \text{Total citations of } B - \text{Total cocitations of } A \text{ and } B}$$

which totals the three highest co-citations for each document and divides it by two. This generates diagonals that approximate the next highest scores in the distribution, indicating the relative importance of a given document within a research domain (White and Griffith 1981). This process aligns with many prior bibliometric studies (e.g. Casillas and Acedo 2007; Culnan et al. 1990; Reader and Watkins 2006; Uysal 2010).

Next, the raw co-citation frequency data in the matrix were normalized using the Jaccard index (Small and Greenlee 1980, p. 279), which is a measure of similarity between documents. This index provides a ratio between the number of times two documents are cited together and the number of times at least one of the two documents is cited. The value of the similarity measure (S) between two citations ranges from 0 (no co-citations) to 1 (co-cited in all subsequent articles).

Normalization overcomes the difference of scale between an often-cited document and a similar document cited less often (Gmur 2003). For example, two less frequently cited documents (e.g. $A = 30$ and $B = 40$) that are nonetheless co-cited 20 times receive a higher similarity score ($S = 0.4$) than two documents that are highly cited (e.g. $A = 100$ and

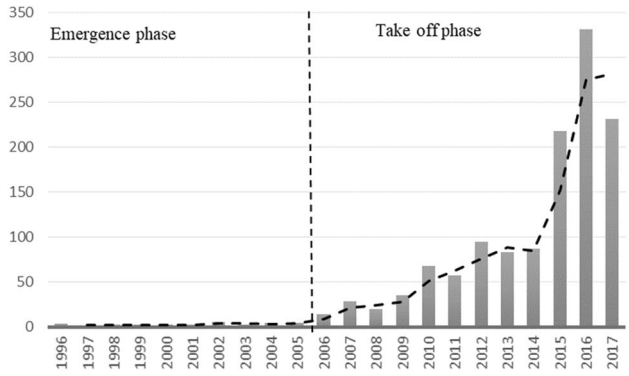

Fig. 2 Annual distribution of 1296 social entrepreneurship publications during 1996–2017

$B = 120$) but receive the same number of co-citations as the less frequently cited documents ($S = 0.1$).

Next, the Jaccard index matrix was used as an input for conducting a multivariate analysis using SPSS software. We specifically used the hierarchical clustering method, which is common in document co-citation analysis (e.g. Casillas and Acedo 2007; García-Lillo et al. 2017a, b; Reader and Watkins 2006; Uysal 2010). Hierarchical methods provide a classification tree "dendrogram" that allows us to graphically analyse the clustering procedure and interpret the results. As recommended by authors such as Griffiths et al. (1984) and McCain (1990), Ward's method of clustering was used.

In the next section, we present our analysis and the results of the citation, document co-citation, and network analyses. We also present the visualization of the intellectual structure of the social entrepreneurship field using VOSviewer.

Results and Discussion

Figure 2 outlines the temporal distribution of the 1296 social entrepreneurship papers identified as the starting point of our analysis. The figure clearly demonstrates that the observation period of 1996–2017 can be divided into two distinct phases. In the early, "emergence phase," 1996–2005, less than six articles were published per year. In the next phase, beginning in 2006, an exponential increase in the number of publications occurred; this is called as the "take-off phase." These numbers clearly signal the growing interest in social entrepreneurship research among scholars during this time.

Citation Analysis

After coding the data using Bibexcel, we used the citation counts of the articles to identify the most influential among them. Based on the criteria specifying a minimum of 30 citations, as discussed in the methodology, we created a list of 109 articles. Table 2 presents a list of those articles most frequently cited by research papers on social entrepreneurship published during the study period.

The following observations can be made based on citation analysis:

1. Papers by Mair and Marti (2006) and Austin et al. (2006) are the most cited, with 292 and 244 citations, respectively. These two articles discuss the conceptualization of social entrepreneurship by defining social entrepreneurship and differentiating it from commercial entrepreneurship. These papers served as the basis upon which further research in the field developed. It is notable that both appeared in 2006, which marked the beginning of the take-off phase (Fig. 2).
2. The works of Dees (1998a), Zahra et al. (2009), Peredo and McLean (2006), Dacin et al. (2010), Yin (1994), Nicholls (2006), Borzaga and Defourny (2004), and Dees (1998b) complete the top ten. Other than Yin (1994), these are all conceptual papers explicating the concept of social entrepreneurship. In particular, two articles by Dees (1998a, b) appearing in the top ten signifies his profound influence on the social entrepreneurship field. The presence of Yin (1994) in the top ten, with 139 citations, demonstrates that the case study methodology is the most favoured in social entrepreneurship research.
3. The full list comprises 82 journal articles, 23 books, and four online articles. Table 3 specifies the journals in which the articles were published. Our observation of the journal list in Table 3 informs us that social entrepreneurship research has appeared in a diverse range of journals, from entrepreneurship to law (e.g. *Yale Law Journal*), public policy (e.g. *Public Administration Review, International Journal of Public Sector Management*), innovation (e.g. *Stanford Social Innovation Review*), sociology (e.g. *American Sociological Review*), not-for-profit (e.g. *International Journal of Nonprofit and Voluntary Sector, Nonprofit Management and Leadership*), and general management. This corroborates earlier claims made by scholars (e.g. Lehner and Kanikas 2012; Short et al. 2009) that social entrepreneurship research has drawn attention from diverse disciplines. However, more than 80% of the articles have been published in general management and entrepreneurship journals, which signifies that social entrepreneurship is positioned as part of the management discipline as opposed to the not-for-profit discipline. The highest number of papers are featured in *Entrepreneurship Theory and Practice*, followed by *Academy of Management Review* and *Academy of Management Journal*, which are all core management journals with high impact factors.
4. Few papers explicitly discussing business ethics appear on the list of the highly cited papers (e.g. Santos 2012;

Table 2 Most cited documents on social entrepreneurship research

Ranking	Most cited documents	Number of citations
1	Mair and Marti (2006)	292
2	Austin et al. (2006)	244
3	Dees (1998a)	181
4	Zahra et al. (2009)	171
5	Peredo and McLean (2006)	156
6	Dacin et al. (2010)	140
7	Yin (1994)	139
8	Nicholls (2006)	136
9	Borzaga and Defourny (2004)	135
10	Dees (1998b)	123
11	Bornstein (2007)	118
12	Weerawardena and Mort (2006)	117
13	Short et al. (2009)	115
14	Alvord et al. (2004)	112
15	Dart (2004)	107
16	Eisenhardt (1989)	99
17	Martin and Osberg (2007)	96
18	Defourny and Nyssens (2010)	93
19	Leadbeater (1997)	93
20	Kerlin (2006)	87
21	Battilana and Dorado (2010)	85
22	Nicholls (2010)	83
23	Dacin et al. (2011)	81
24	Chell (2007)	80
25	Shane and Venkatraman (2000)	79
26	Prahalad (2005)	78
27	Miles and Huberman (1994)	77
28	Santos (2012)	76
29	Nyssens (2006)	71
30	Seelos and Mair (2005)	70
31	Dimaggio and Powell (1983)	67
32	Sharir and Lerner (2006)	66
33	Di Domenico et al. (2010)	65
34	Miller et al. (2012)	63
35	Thompson (2002)	63
36	Mort et al. (2003)	63
37	Mair and Marti (2009)	61
38	Glaser and Strauss (1967)	60
39	Doherty et al. (2014)	59
40	Peredo and Chrisman (2006)	59
41	Shaw and Carter (2007)	59
42	Eikenberry and Kluvner (2004)	58
43	Strauss and Corbin (1990)	58
44	Schumpeter (1934)	57
45	Suchman (1995)	57
46	Thompson et al. (2000)	55
47	Eisenhardt and Graebner (2007)	51
48	Porter and Kramer (2011)	51
49	Bacq and Janssen (2011)	50
50	Defourny and Nyssens (2008)	50
51	Tracey et al. (2011)	50
52	Battilana and Lee (2014)	46
53	Kerlin (2010)	46
54	Pache and Santos (2013)	46
55	Pearce (2003)	46
56	Haugh (2007)	45
57	Tracey and Philips (2007)	45
58	Emerson (2003)	43
59	Patton (1990)	43
60	Yunus (2007)	43
61	Corner and Ho (2010)	42
62	Nicholls (2009)	42
63	Drayton (2002)	41
64	Certo and Miller (2008)	40
65	Schumpeter (1942)	40
66	Teasdale (2012)	40
67	Haugh (2005)	38
68	Sarasvathy (2001)	38
69	Waddock and Post (1991)	38
70	Alter (2007)	37
71	Baker and Nelson (2005)	37
72	Choi and Majumdar (2014)	37
73	Fowler (2000)	37
74	Emerson and Twersky (1996)	36
75	Hansmann (1980)	36
76	Jay (2013)	36
77	Zahra et al. (2008)	36
78	Dees et al. (2002)	35
79	Granovetter (1985)	35
80	Lepoutre et al. (2013)	35
81	Putnam (2000)	35
82	Dees (2007)	34
83	Dorado (2006)	34
84	Foster and Bradach (2005)	34
85	Giddens (1984)	34
86	Mair et al. (2006)	34
87	Mair et al. (2012)	34
88	Moss et al. (2011)	34
89	Parkinson and Howorth (2008)	34
90	Yunus et al. (2010)	34
91	Dey and Steyart (2010)	33
92	Pache and Santos (2010)	33
93	Spear (2006)	33
94	Tracey and Jarvis (2007)	33
95	Amin et al. (2003)	32
96	Hair et al. (1998)	32
97	Meyer and Rowan (1977)	32
98	Ridley-Duff and Bull (2011)	32

Table 2 (continued)

Ranking	Most cited documents	Number of citations
99	Townsend and Hart (2008)	32
100	Barney (1991)	31
101	Freeman (1984)	31
102	Galera and Borzaga (2009)	31
103	Harding (2004)	31
104	Maguire et al. (2004)	31
105	Battilana et al. (2012)	30
106	North (1990)	30
107	Seelos and Mair (2007)	30
108	Smith et al. (2013)	30
109	Venkataraman (1997)	30

Zahra et al. 2009). This is surprising given that SEs face multiple ethical challenges (Zahra et al. 2009). Moreover, these papers might have been cited for reasons other than ethics. For instance, the paper by Santos (2012) is generally cited for its conceptualization of SEs in terms of value creation and value capture. Similarly, the paper by Zahra et al. (2009) is primarily cited for its categorization of social entrepreneurs. This clearly indicates that the field of social entrepreneurship is yet to integrate the component of ethics.

Document Co-citation Analysis

Document co-citation analysis helps to identify knowledge groups in social entrepreneurship research and explore the relationships between them. Through this analysis, we identified nine distinct clusters. The cluster-wise separation of documents is provided in Table 4.

Cluster 1 comprises 15 documents, including one online article, three books, and 11 journal articles. In Cluster 1, we observe that most of these documents were published before 2006, in the emergence phase of the social entrepreneurship field (see Fig. 2). These documents primarily discuss the emergence of the social entrepreneur and social entrepreneurship phenomena by defining and explaining them. For instance, Dees (1998a) clarifies the meaning of the term "social entrepreneurship," which subsequently became a foundation for social entrepreneurship research. On similar lines, Alvord et al. (2004), Nicholls (2006), and Seelos and Mair (2005) discuss the conceptualization and emergence of the social entrepreneurship phenomenon. Another set of work that includes Bornstein (2007), Leadbeater (1997), Thompson (2002), and Waddock, and Post (1991) explains the term "social entrepreneur" and discusses their role in facilitating societal change. Many of the initial articles in this cluster (e.g. Dees 1998a, b; Drayton 2002) appeared in practitioner-oriented journals, such as *Harvard Business Review* and *California Management Review*, which signifies that as a field, social entrepreneurship initially emerged from practice and later moved to academia. We also observe that these initial works in the emergence phase were focused heavily on social entrepreneurship and social entrepreneur phenomena but only marginally on the SE as an organizational form. Regarding ethics, we identify few works in this cluster. In an earlier work on social entrepreneurs, Leadbeater (1997) emphasized the ethical qualities of individuals in SEs as differentiating them from individuals in other organizations. Similarly, Drayton (2002) emphasized the need for an "ethical fiber" (p. 124) in social entrepreneurs and "ethics as a core management standard" (p. 130) in social entrepreneurship.

Cluster 2 comprises six documents, including one book and five journal articles. These documents, published in the beginning of take-off phase, attempt to theoretically conceptualize the term "social entrepreneurship." For instance, Weerawardena and Mort (2006) delineate social entrepreneurship as a multi-dimensional construct, with the dimensions of innovativeness, proactiveness, and risk management operating within the constraints of environment, sustainability, and social mission. Further, Austin et al. (2006) highlight the similarities and differences between social and commercial entrepreneurship. The works in this cluster formed the basis for the exponential growth of academic research and publication in social entrepreneurship. This is also evidenced by all journal articles in this cluster being highly cited. Moreover, these articles are all published in academic journals, which signifies the growing prominence of social entrepreneurship in academia during this time. One paper in this cluster, by Zahra et al. (2009), discusses ethics in detail. The authors identify three types of social entrepreneurs: social bricoleur, social constructionist and social engineer and discuss different ethical challenges faced by each type of entrepreneur. The social bricoleurs face ethical challenges in efficiently allocating the social wealth as the value of a social good is difficult to quantify; social constructionists face ethical challenges in garnering resources to achieve their vision of transforming social institutions; social engineers face ethical challenges whenever the prevalent social values are not in line with their values (Zahra et al. 2009). The seminal work by Austin et al. (2006), which differentiates between social and commercial entrepreneurship, contains no discussion about ethics. We believe that this significantly influenced future research by failing to consider ethics as a core differentiator between social and commercial enterprises.

Cluster 3 comprises 18 documents that include two online articles, three books, and 13 journal articles. These documents primarily adopt an organizational perspective and discuss the emergence and legitimacy of SEs as

Table 3 List of journals where the most cited documents on social entrepreneurship research have been published

Title of journal	Frequency	Percentage (%)
Entrepreneurship theory and practice	8	7.34
Academy of management review	7	6.42
Academy of management journal	5	4.59
Journal of world business	4	3.67
Harvard business review	3	2.75
Journal of business venturing	3	2.75
Social enterprise journal	3	2.75
American journal of sociology	2	1.83
Business horizons	2	1.83
California management review	2	1.83
Journal of business ethics	2	1.83
Organization science	2	1.83
Public administration review	2	1.83
Stanford social innovation review	2	1.83
Strategic entrepreneurship journal	2	1.83
The academy of management perspectives	2	1.83
Voluntas: international journal of voluntary and nonprofit organizations	2	1.83
Entrepreneurship and regional development	2	1.83
Academy of management annals	1	0.92
Academy of management learning & education	1	0.92
Accounting, organizations and society	1	0.92
Administrative science quarterly	1	0.92
Advances in entrepreneurship, firm emergence and growth	1	0.92
American sociological review	1	0.92
Business ethics quarterly	1	0.92
Business strategy review	1	0.92
International journal of management reviews	1	0.92
International journal of nonprofit and voluntary sector	1	0.92
International journal of public sector management	1	0.92
International journal of social economics	1	0.92
International small business journal	1	0.92
Journal of developmental entrepreneurship	1	0.92
Journal of enterprising communities: people and places in the global economy	1	0.92
Journal of management	1	0.92
Journal of small business and enterprise development	1	0.92
Journal of social entrepreneurship	1	0.92
Long range planning	1	0.92
Management decision	1	0.92
Nonprofit management and leadership	1	0.92
Small business economics	1	0.92
Society	1	0.92
The journal of applied behavioural science	1	0.92
The Yale law journal	1	0.92
Third world quarterly	1	0.92
Others	28	25.69
Total	109	100.00

Table 4 List of articles in different clusters

Cluster	Articles
1	Alvord et al. (2004), Bornstein (2007), Chell (2007), Dees (1998a , b), Drayton (2002), Leadbeater (1997), Martin and Osberg (2007), Nicholls (2006), Seelos and Mair (2005), Sharir and Lerner (2006), Shaw and Carter (2007), Thompson (2002), Thompson et al. (2000), Waddock and Post (1991)
2	Austin et al. (2006), Mair et al. (2006), Peredo and McLean (2006), Short et al. (2009), Weerawardena and Mort (2006), Zahra et al. (2009)
3a	Alter (2007), Borzaga and Defourny (2004), Defourny and Nyssens (2008, 2010), Doherty et al. (2014), Galera and Borzaga (2009), Kerlin (2006), Kerlin (2010), Nyssens (2006), Parkinson and Howorth (2008), Pearce (2003), Ridley- Duff and Bull (2011), Teasdale (2012), Yunus et al. (2010)
3b	Dart (2004), Dey and Steyart (2010), Eikenberry and Kluvner (2004), Nicholls (2010)
4a	Bacq and Janssen (2011), Choi and Majumdar (2014), Dacin et al. (2010, 2011), Mair et al. (2012), Miller et al. (2012), Santos (2012)
4b	Battilana et al. (2012), Emerson (2003), Moss et al. (2011), Nicholls (2009)
5a	Certo and Miller (2008), Corner and Ho (2010), Dees (2007), Di Domenico et al. (2010), Hair et al. (1998), Harding (2004), Haugh (2005), Lepoutre et al. (2013), Mair and Marti (2006), Mort et al. (2003), Spear (2006), Tracey and Jarvis (2007), Tracey and Phillips (2007), Zahra et al. (2008)
5b	Baker and Nelson (2005), Sarasvathy (2001), Schumpeter (1934), Shane and Venkatraman (2000), Venkataraman (1997)
5c	Emerson and Twersky (1996), Foster and Bradach (2005), Fowler (2000), Haugh (2007), Peredo and Chrisman (2006)
5d	Maguire et al. (2004), Mair and Marti (2009), Seelos and Mair (2007), Townsend and Hart (2008)
6	Battilana and Dorado (2010), Battilana and Lee (2014), Jay (2013), Pache and Santos (2010, 2013), Smith et al. (2013), Tracey et al. (2011)
7a	Barney (1991), Dimaggio and Powell (1983), Freeman (1984), Giddens (1984), Granovetter (1985), Meyer and Rowen (1977), North (1990), Schumpeter (1942), Suchman (1995)
7b	Amin et al. (2003), Dees et al. (2002), Hansmann (1980), Porter and Kramer (2011), Prahalad (2005), Putnam (2000), Yunus (2007)
7c	Glaser and Strauss (1967), Patton (1990), Strauss and Corbin (1990)
8	Eisenhardt and Graebner (2007), Eisenhardt (1989), Miles and HuChoi and Majumdarberman (1994), Yin (1994)
9	Dorado (2006)

an organizational form, which differs from the focus of the documents in the earlier two clusters. Closely examining this cluster aided us in identifying two different yet related subgroups.

The first subgroup, 3a, discusses the meaning and conceptualization of SEs across regions. For instance, Defourny and Nyssens (2010) and Kerlin (2006) discuss the emergence and conceptualization of social entrepreneurship across North America and Europe. We further note that in this cluster, many papers include an implicit discussion of ethics. For instance, Pearce (2003) mentions that "the purpose of SEs is to contribute to the common good, to benefit society and more widely, the planet. Specific objectives will fit within this overarching sense of social purpose" (p. 34). On a similar note, Defourny and Nyssens (2010) argue in favour of the high moral ground of social entrepreneurs by stating that, irrespective of the school of thought, the aim of social entrepreneurship is to create social value. Advancing this argument even further, Alter (2007) emphasizes that socially responsible business follows sustainability strategies with the idea of "doing well by doing good"; "good," in this case, refers to the public good based on utilitarian ethical reasoning. Referring to the language and discourse used by social entrepreneurs, Parkinson and Howorth (2008) discuss how social entrepreneurs receive moral approval in the society in which they operate. Doherthy et al. (2014) argue that in SEs, strategic choices are driven primarily by social and ethical, rather than economic, considerations.

The second subgroup, 3b, includes works by Dart (2004), Dey and Steyart (2010), Eikenberry and Kluvner (2004), and Nicholls (2010). These works attempt to establish or question the legitimacy of SEs. For instance, Dart (2004) adopts an institutional perspective and demonstrates that SEs gain moral legitimacy by being pro-market and business-like, which has become the dominant ideology in many nations. However, Eikenberry and Kluvner (2004) adopt a critical approach and discuss how SEs and, in general, the marketization of the not-for-profit sector impacts the contributions of these organizations to civil society. They argue that SEs that attempt to blend social and economic missions may face ethical challenges in failing to deliver on their social missions.

Cluster 4 comprises 11 journal articles, primarily published around 2010. These works build on the initial papers and attempt to broaden the social entrepreneurship field. We can observe two subgroups within this cluster.

The first subgroup, 4a, includes a set of works that critically review the status of the research on social entrepreneurship by further refining the concept and providing new

directions for the field. For example, Bacq and Janssen (2011) review social entrepreneurship research and identify definitional issues based on geographic and thematic criteria. They further propose a new definition to guide further research. Similarly, Choi and Majumdar (2014) argue that social entrepreneurship is an essentially contested concept and that a unified definition is not plausible. They therefore propose a cluster concept that can aid in advancing social entrepreneurship research. In this cluster, two papers, Mair et al. (2012) and Santos (2012), are from the *Journal of Business Ethics*. Santos (2012) highlights the concepts of value creation and appropriation and discusses how the conflict between the two can lead to ethical challenges for SEs. Mair et al. (2012) propose a typology of social entrepreneuring models based on four forms of capital—social, economic, human, and political—and discuss distinct principles that can act as anchors of judgment regarding what is valuable for each model. Further, Choi and Majumdar (2014) and Dacin et al. (2010) briefly discuss ethics in their papers. Choi and Majumdar (2014) argue that the concept of social value creation encapsulates altruistic motives and values such as freedom, equality, and tolerance. Dacin et al. (2010) discuss the importance of a social entrepreneur's intentions to behave ethically to contribute to the well-being of others.

The second subgroup, 4b, which consists of works by Battilana et al. (2012), Emerson (2003), Moss et al. (2011), and Nicholls (2009), extends social entrepreneurship research by examining challenges that arise from the dual nature of SEs. For instance, Battilana et al. (2012) discuss various challenges faced by SEs related to financing, legal status, customers, beneficiaries, and organizational culture in their attempt to combine aspects of not-for-profit and for-profit models. Nicholls (2009) examines the duality issue from an accounting perspective and argues that SEs practice "Blended Value Accounting" and that they report financial, social, and environmental performance. Moss et al. (2011) discuss the dual identities of SEs in terms of utilitarian and normative identities. The normative identity is more social and people oriented and can be interpreted as a case of ethical behaviour.

Cluster 5 is the largest and consists of 28 documents, including one online article, two books, and 25 journal articles. We observe that papers in this cluster broadly represent the study of entrepreneurship phenomena to include social entrepreneurship, institutional entrepreneurship, general entrepreneurship, and community-led entrepreneurship. This is a heterogeneous cluster, and upon further exploration, we can identify four different subgroups in this cluster.

The first subgroup, 5a, primarily contains works that adopt an entrepreneurship approach and discuss topics such as opportunity recognition, resource mobilization, and performance measurement in social entrepreneurship. For example, papers by Corner and Ho (2010) and Zahra et al. (2008) discuss the processes of opportunity identification and exploitation and the various dimensions of social entrepreneurial opportunity. Mair and Marti (2006) examine the terms "social" and "entrepreneurship" separately and define social entrepreneurship as a process that involves the innovative use of resources to address social problems. Lepoutre et al. (2013), to advance quantitative research in social entrepreneurship, propose a methodology to measure social entrepreneurship activity. The book by Hair et al. (1998) falls into this subgroup, as it discusses quantitative methodology and is referred to by scholars measuring social entrepreneurial activities. Regarding ethics, Mair and Marti (2006) indicate potential challenges in considering social entrepreneurs as ethically sound. They argue that "although social entrepreneurship is often based on ethical motives and moral responsibility, the motives for social entrepreneurship can also include less altruistic reasons such as personal fulfillment" (p. 38). In implicitly emphasizing the importance of ethics, Mort et al. (2003) argue that virtues such as integrity, love, empathy, and honesty are key differentiating factors between members of social and other enterprises.

The second subgroup, 5b, comprises Baker and Nelson (2005), Sarasvathy (2001), Shane and Venkatraman (2000), Venkataraman (1997), and Schumpeter (1934). This set of core entrepreneurship papers discusses the development of entrepreneurship research, resource mobilization, and decision-making. The presence of these papers indicates that concepts and ideas from the entrepreneurship field, rather than from the not-for-profit sector, have been extended to study social entrepreneurship. Since these papers primarily appear in the initial phase of entrepreneurship research, no implicit or explicit references to business ethics exist.

The third subgroup, 5c, contains works by Emerson and Twersky (1996), Foster and Bradach (2005), Fowler (2000), Haugh (2007), and Peredo and Chrisman (2006). This set of works discuss SEs in relation to not-for-profit and community-based enterprises. For instance, Haugh (2007) and Peredo and Chrisman (2006) theorize community-led ventures and compare them with other organizations, including SEs. They note that in community-led ventures, the entire community acts as an entrepreneur and aims to create value for the local community. Foster and Bradach (2005) attempt to understand the challenges that a not-for-profit organization may face when attempting to incorporate earned income generation into its business model. In an implicit reference to the ethics, Peredo and Chrisman (2006) discuss the notion of the common good as essential for venture creation.

The final subgroup, 5d, contains papers by Maguire et al. (2004), Mair and Marti (2009), Seelos and Mair (2007), and Townsend and Hart (2008). These works adopt an institutional perspective and discuss how the institutional context shapes the behaviour of SEs. For instance, Maguire et al. (2004) observe that, to facilitate institutional change, poorly

resourced organizations engage in various critical activities, such as occupying a subjective position that has wide legitimacy, theorizing new practices, and institutionalizing these practices by connecting them to stakeholder routines and values. On a similar note, Mair and Marti (2009) study the work of entrepreneurial actors operating under the condition of institutional voids in developing countries and highlight the various activities that entrepreneurial actors undertake to address these voids. This work argues that the moral obligation to help the needy is a key dimension that drives the emergence of SEs in non-munificent environments such as Bangladesh. Townsend and Hart (2008) argue that founders' perceptions of an ambiguous institutional environment lead to the variance in the choices of organizational forms of SEs. This paper also discusses ethical considerations at the institutional level and argues that inherent ethical considerations may drive the formation of not-for-profit organizations. However, when substantial benefits accrue from the activities of the organization and its social mission coincides with an economic mission, the advantages may then outweigh ethical considerations and result in the formation of a for-profit organization.

Cluster 6 consists of seven journal articles. We observe that papers in this cluster discuss hybrid organizations and that SEs have been used as the context. Hybrid organizations incorporate elements from multiple institutional logics (Battilana and Dorado 2010), and SEs, which combine social logic that guides social value creation and market logic that guides financial sustainability, are the epitome of hybrid organizations. The set of papers in this cluster highlights the challenges of hybrid organizations, specifically SEs, and the ways through which these challenges are addressed. Battilana and Dorado (2010) for instance suggest that, when faced with challenges of conflicting identities arising out of hybridity, SEs must create a common organizational identity that strikes a balance between the conflicting identities. Possessing such a common identity prevents the formation of subgroup identities in the organization that may lead to conflict and threaten the existence of the organization. Additionally, Pache and Santos (2013) suggest that, as hybrid organizations, SEs selectively couple intact elements prescribed by each of the conflicting logics instead of adopting strategies of decoupling or compromise. In an indirect reference to ethics, Pache and Santos argue that the "selfless commitment" (p. 983) drives volunteers to work for SEs. Further, Smith et al. (2013) discuss the ethical challenges faced by social entrepreneurs as they incorporate social missions in business ventures. In this incorporation, business ventures embed multiple and inconsistent goals, norms, and values, which leads to an ethical dilemma for their leaders. This leads to four distinct types of tensions—performing, organizing, belonging, and learning—that SEs must deal with (Smith et al. 2013).

Cluster 7 consists of 19 documents, including 12 books and seven journal articles. We can identify three subgroups within this cluster that represent seminal works in the areas of management, SEs, and qualitative research. The first subgroup, 7a, includes works by Barney (1991), Dimaggio and Powell (1983), Giddens (1984), Granovetter (1985), and Suchman (1995). We observe that most of these works come from organizational theory, which indicates its strong influence on social entrepreneurship research. We can specifically observe the prominent presence of works that study the relationship between institutions and actors. This is not surprising, given that SEs represent a novel organizational form (Battilina and Lee 2014; Tracey et al. 2011) that combines the for-profit and not-for-profit models; hence, scholars are particularly interested in studying the legitimacy of SEs and how they manage institutional pressures. The second subgroup, 7b, includes works by Amin et al. (2003), Dees et al. (2002), Hansmann (1980), Porter and Kramer (2011), and Prahalad (2005). These works represent key ideas related to social entrepreneurship and, in general, address how organizations can contribute to societal well-being. Porter and Kramer (2011) examine ethics as a standard and argue that "creating shared value presumes compliance with the law and ethical standards, as well as mitigating any harm caused by the business" (p. 15). The third subgroup, 7c, includes seminal works on qualitative research methodology by Glaser and Strauss (1967), Patton (1990), and Strauss and Corbin (1990), which signifies the prominence of qualitative research methodology in the social entrepreneurship field.

Cluster 8 consists of four documents, including two books and two journal articles. This cluster includes the following works: Eisenhardt and Graebner (2007), Eisenhardt (1989), Miles and Huberman (1994), and Yin (1994). These works

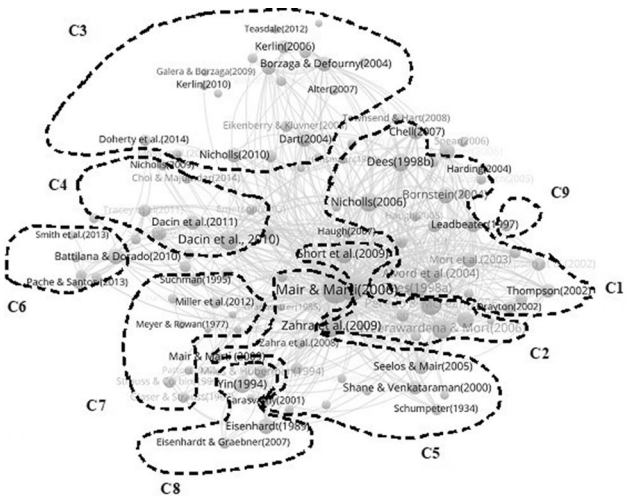

Fig. 3 Intellectual structure of the social entrepreneurship research. C represents cluster

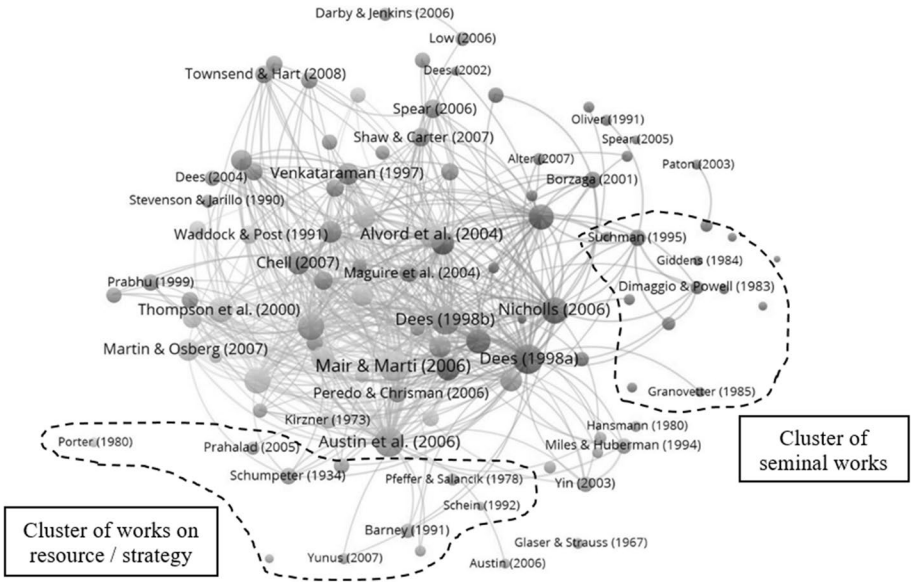

Fig. 4 Intellectual structure of the social entrepreneurship research [2006 to 2011]

are related to case study research and qualitative research methodology. The significant presence of works in case study research suggests that the case study is the dominant qualitative research approach used by social entrepreneurship scholars.

Cluster 9 contains only one journal article: Dorado (2006). This article discusses the difference between social entrepreneurial ventures and regular entrepreneurial ventures and stresses the need for studying them separately rather than translating findings from one to the other.

To conclude this section of cluster analysis, we display a visualization of the intellectual structure (see Fig. 3) using VOSviewer, a software that can visually represent a large body of scientific knowledge. Although VOSviewer helps us to build and visualize a scientific map from network data, it does not possess preprocessing capabilities and thus cannot create a bibliometric network. Hence, we used Bibexcel to prepare the network data to be directly used by VOSviewer. The VOSviewer builds a bi-dimensional map in which each element, in our case each document, is represented by a label and a circle. The sizes of the labels and circles represent the importance of the element, and the distance between elements reflects the degree of similarity. We illustrate the nine clusters using dotted lines on the map.

To further clarify the intellectual development of the social entrepreneurship field, we divided the period of 2006–2017 (the take-off phase, as per Fig. 2) into two: 2006–2011 and 2012–2017. We exclude the period of 1996–2006 (the emergence phase) due to the smaller number of documents. For each period, 2006–2011 and 2012–2017, we conducted separate cluster analyses following the process specified in the methodology section. Figures 4 and 5 present the visualization of the intellectual structure for the two time periods, respectively. These visualizations were developed using VOS viewer and Bibexcel.[3] We compared the two periods and attempted to identify the similarities and differences between them.

The following observations can be made based on citation analysis:

1. Some works, such as Austin et al. (2006), Mair and Marti (2006), and Nicholls (2006), have been influential in both time periods, which indicates their critical role in the development of the discipline across time.
2. In the first phase, 2006–2011, we found a distinct cluster of research on strategy and resources, including articles by Barney (1991), Pfeffer and Salansik (1978), and Porter and Kramer (1980). However, in the second phase, 2012–2017, we cannot find such a separate cluster, indicating that during this phase of development, resource and strategy received less attention than other areas, such as institutional theory.
3. In the first phase, 2006–2011, a separate cluster was discovered consisting of seminal works in diverse areas such as institutional isomorphism (Dimaggio and Powell 1983), legitimacy (Suchman 1995), and network (Granovetter 1985). However, as the field progressed, scholars began citing works from only the social entrepreneurship field, as evidenced by the lack of such a cluster of seminal works in the second phase, 2012–2017.
4. The second phase, 2012–2017, contains a cluster of works related to hybridity. This cluster primarily

[3] For space constraints, we do not discuss each of the clusters emerging in the periods of 2006–2011 and 2012–2017.

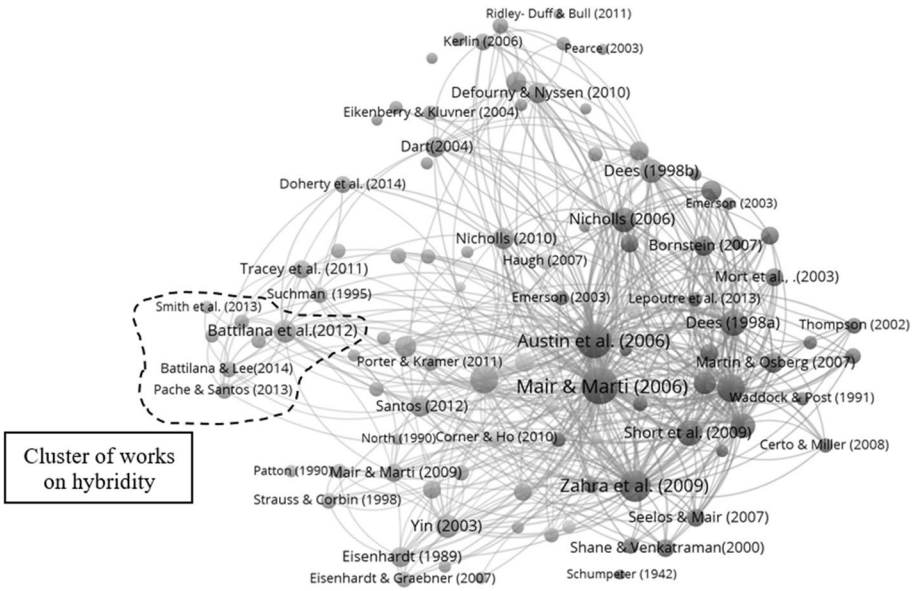

Fig. 5 Intellectual structure of the social entrepreneurship research [2012 to 2014]

contains works after 2010, indicating that the idea of hybridity has been quickly integrated into the social entrepreneurship domain.

Social Network Analysis

We used SNA to examine the centrality of the documents in the co-citation network. This augments the cluster analysis and furthers our understanding of the intellectual structure of social entrepreneurship research. The normalized co-citation data were used to conduct the network analysis. The nodes in the network represent documents, and the edges represent linkages in which the distance between two nodes signifies the strength of the co-citation linkage.

The results of our network analysis demonstrate that the overall degree centralization of the network is 7.9%, the overall closeness centralization is 13.96%, and the overall betweenness centralization is 0.03%. The overall network centrality percentages signify the degree of variance in our co-citation network as a percentage of that of a perfect star network possessing the highest possible centrality (Hanneman and Riddle 2005). The low value of overall network degree centralization (7.9%) indicates that individual documents do not wield a strong influence. The overall closeness centralization is relatively higher, but the value is still less (13.96%), which indicates a lower level of centralization in the entire network. Similarly, the very low value (0.03%) of overall betweenness centralization again indicates that no disproportionate amount of centralization exists in the network. This is understandable considering that 92.23% of the direct links between documents have occurred without the aid of intermediaries. The lower values for all three centralization measures also signify the emerging nature of the social entrepreneurship field, where individual documents with strong influences have yet to emerge.

Tables 5, 6, and 7 list the documents with the five highest centralization scores. Nine documents share the top spot in all three centralization measures: degree, closeness, and betweenness. They share the highest degree centralization measure of 108 direct links with other documents in the network, the highest closeness centrality value of 100, and the highest betweenness centrality value of 5.693. Although these nine documents share the top spot, this does not imply that they occupy the dominant position in the network, as the overall centralization measures are low, as discussed above. Moreover, the top five positions of degree centralization are shared by 38 documents, which indicates the dispersion of power in the network.

The practice of SNA also helps identify which actors are central or peripheral in a network (Scott 1991). The UCINET SNA software uses genetic algorithms to partition the network into core and peripheral groups (Acedo et al. 2006; Borgatti 2002; Borgatti et al. 2002). In the network examined here, the core includes 37 documents.[4]. The majority of

[4] List of core documents identified through social network analysis: Alvord et al. (2004), Austin et al. (2006), Bacq and Janssen (2011), Battilana and Dorado (2010), Bornstein (2007), Chell (2007), Corner and Ho (2010), Dacin et al. (2010), Dacin et al. (2011), Dart (2004), Dees (1998a, b), Di Domenico et al. (2010), Dorado (2006), Drayton (2002), Eisenhardt (1989), Haugh (2007), Leadbeater (1997), Mair and Marti (2006), Mair and Marti (2009), Martin and Osberg (2007), Nicholls (2006), Nicholls (2010), Peredo and McLean (2006), Santos (2012), Seelos and Mair (2005), Shane and Venkatraman (2000), Sharir and Lerner (2006), Shaw and Carter (2007), Short et al. (2009), Thompson (2002), Thompson et al. (2000), Townsend and Hart (2008), Tracey et al. (2011), Weerawardena and Mort (2006), Yin (1994), Zahra et al. (2009).

Table 5 Degree centrality measures for documents with five highest scores

Documents	Degree centrality
Alvord et al. (2004), Austin et al. (2006), Chell (2007), Dacin et al. (2010), Dees (1998a, b), Eikenberry and Kluvner (2004), Yin (1994), Zahra et al. (2009)	108
Dacin et al. (2011), Dart (2004), Defourny and Nyssens (2010), Di Domenico et al. (2010), Mair and Marti (2006), Peredo and Chrisman (2006), Sharir and Lerner (2006), Weerawardena and Mort (2006)	107
Bacq and Janssen (2011), Bornstein (2007), Borzaga and Defourny (2004), Eisenhardt (1989), Leadbeater (1997), Martin and Osberg (2007), Miles and Huberman (1994), Short et al. (2009), Tracey et al. (2011)	106
Battilana and Dorado (2010), Corner and Ho (2010), Kerlin (2006), Mair and Marti (2009), Nicholls (2006), Peredo and McLean (2006), Santos (2012), Suchman (1995)	105
Dimaggio and Powell (1983), Emerson (2003), Nicholls (2010), Shane and Venkatraman (2000)	104

Table 6 Closeness centrality measures for documents with five highest scores

Documents	Closeness centrality
Alvord et al. (2004), Austin et al. (2006), Chell (2007), Dacin et al. (2010), Dees (1998a, b), Eikenberry and Kluvner (2004), Yin (1994), Zahra et al. (2009)	100
Dacin et al. (2011), Dart (2004), Defourny and Nyssens (2010), Di Domenico et al. (2010), Mair and Marti (2006), Peredo and Chrisman (2006), Sharir and Lerner (2006), Weerawardena and Mort (2006)	99.083
Bacq and Janssen (2011), Bornstein (2007), Borzaga and Defourny (2004), Eisenhardt (1989), Leadbeater (1997), Martin and Osberg (2007), Miles and Huberman (1994), Short et al. (2009), Tracey et al. (2011)	98.182
Battilana and Dorado (2010), Corner and Ho (2010), Kerlin (2006), Mair and Marti (2009), Nicholls (2006), Peredo and McLean (2006), Santos (2012), Suchman (1995)	97.297
Dimaggio and Powell (1983), Emerson (2003), Nicholls (2010), Shane and Venkatraman (2000)	96.429

Table 7 Betweenness centrality measures for documents with five highest scores

Documents	Betweenness centrality
Alvord et al. (2004), Austin et al. (2006), Chell (2007), Dacin et al. (2010), Dees (1998a, b), Eikenberry and Kluvner (2004), Yin (1994), Zahra et al. (2009)	5.693
Dacin et al. (2011), Di Domenico et al. (2010)	5.589
Dart (2004)	5.573
Mair and Marti (2006)	5.523
Defourny and Nyssens (2010)	5.507

these core articles are central social entrepreneurship works. The core list of documents includes Eisenhardt (1989) and Yin (1994), which signals the predominant use of case study methodology in social entrepreneurship research

Conclusion

The findings of this paper contribute to the development of the social entrepreneurship field in the following ways: (1) identifying key scholarly contributions in the field and the linkages among them, (2) tracing the evolution of the field over time, (3) analysing the social entrepreneurship field, and (4) exploring the role of ethics in social entrepreneurship research. In this section, we consider each of these contributions.

Key Scholarly Contributions to the Social Entrepreneurship Field

Our citation analysis reveals that some works, such as those by Mair and Marti (2006), Austin et al. (2006), and Dees (1998a), are highly cited, which supports the findings of earlier bibliometric studies that employed only the citation analysis (e.g. Rey-Marti et al. 2016; Sassmannshausen and Volkmann 2018). However, we cannot conclude that these

documents are in fact highly influential in shaping the social entrepreneurship area, as our SNA reveals that no set of documents enjoys a disproportionate amount of dominance. This is evidenced by the low level of network centrality and the high number of documents being identified as core documents in our analysis. Our study thus provides scientific evidence for the claim of other scholars that the field of social entrepreneurship is still emerging (Rey-Marti et al. 2016). Further, no dominance of particular journals exists, and social entrepreneurship research is dispersed across diverse journals. However, we can specifically observe the dominance of management and entrepreneurship journals, which signifies the growing prominence of social entrepreneurship in the management discipline as opposed to in the not-for-profit discipline.

Evolution of the Social Entrepreneurship Field

The results of our study indicate two fundamental findings regarding the evolution of the social entrepreneurship field: the field has grown significantly over last decade, although it is yet to reach its full maturity, and the field has evolved from conceptualizations of the concept to incorporate multiple organizational aspects, such as organizational mission, hybridity, resources, legitimacy, and ethics.

Regarding the growth of the field in the last decade, since 2006, social entrepreneurship research has increasingly gained scholarly attention, as evidenced by the increase in the number of publications (Phillips et al. 2015). This is reflected in the identification of the take-up phase in our analysis. Although research began to grow rapidly, Clusters 4 and 5c demonstrate that even later in the development of the field, between 2009 and 2011, scholars were still grappling with definitional issues, and social entrepreneurship was often cited and discussed along with other concepts, such as institutional entrepreneurship and community-based enterprises. Many of the past review papers that attempted to provide definitional clarity belonged to these clusters (e.g. Bacq and Janssen 2011; Dacin et al. 2010). Such confusion in the conceptualization of the field is evidenced by some scholars claiming the field to be in its pre-paradigmatic stage (Nicholls 2010) while others argue that social entrepreneurship is an essentially contested concept (Choi and Majumdar 2014). Such a lack of consensus regarding the understanding of social entrepreneurship hinders the progress of research in the field.

Regarding the evolution of the social entrepreneurship field, before 2006, its works focused solely on the emergence of social entrepreneurship and social entrepreneurs. In this phase of emergence, scholars attempted to explain the phenomenon of social entrepreneurship and the key role the social entrepreneur played within it (Alvord et al. 2004; Leadbeater 1997; Nicholls 2006; Seelos and Mair 2005). In the early stage of the development of the social entrepreneurship field, the focus was completely on social entrepreneurs, their characteristics as visionary leaders, and their noble intentions of social value creation (Dees 2001; Emerson and Twersky 1999). These social entrepreneurs were considered heroes bringing systemic impacts to the lives of many people by addressing social problems (Thake and Zadek 1997; Waddock and Post 1991). The social mission of an organization was considered the outcome of the social entrepreneur's desire to create social value.

In the initial years, around 2006, the focus was on developing a theoretical conceptualization of the social entrepreneurship phenomenon (Austin et al. 2006; Weerawardena and Mort 2006; Zahra et al. 2009). This set of works attempted to conceptualize social entrepreneurship by identifying how it differs from commercial entrepreneurship. This particular group of works is highly cited and has formed the basis for further scholarly research on social entrepreneurship. Along with these works, other scholars also conceptualized social entrepreneurship in relation to not-for-profit and community enterprises (Foster and Bradach 2005; Fowler 2000; Haugh 2007; Peredo and Chrisman 2006). This is not surprising, since the initial view toward social entrepreneurship highlighted the not-for-profit aspects of the organization. Around this time, yet another set of scholars discussed the meaning and conceptualization of SEs in terms of their historical roots and emergence, characteristics, future prospects, contributions to society, and legal status (Borzaga and Defourny 2004; Pearce 2003). This group of scholars also attempted to discuss models, typologies, and forms of SEs (Alter 2007; Teasdale 2012; Yunus et al. 2010). This set of works on SEs served as a foundation for the subsequent rapid growth in the research, which pertained to multiple organizational aspects of SE.

Scholars subsequently focused on entrepreneurship aspects and examined topics such as the opportunity recognition, resource mobilization, and performance measurement of social entrepreneurship (Certo and Miller 2008; Corner and Ho 2010; Tracey and Jarvis 2007; Tracey and Phillips 2007; Zahra et al. 2008). This marked a shift of focus from idealistic conceptualizations to the pragmatic aspects of SEs. Another area of work that marked the post-2006 era of social entrepreneurship research was the growing focus on the critical review of the status of research on social entrepreneurship, which further refined the concept and provided new directions for the field (Bacq and Janssen 2011; Choi and Majumdar 2014; Dacin et al. 2010, 2011; Mair et al. 2012; Miller et al. 2012). Another set of research that proliferated during this time was based on studying SEs from the institutional perspective. These works attempted to understand how the institutional context shapes the behaviour of SEs and what role they can play as institutional entrepreneurs to influence the contexts in which they operate (Mair and Marti 2009; Seelos and Mair 2007; Townsend and Hart 2008).

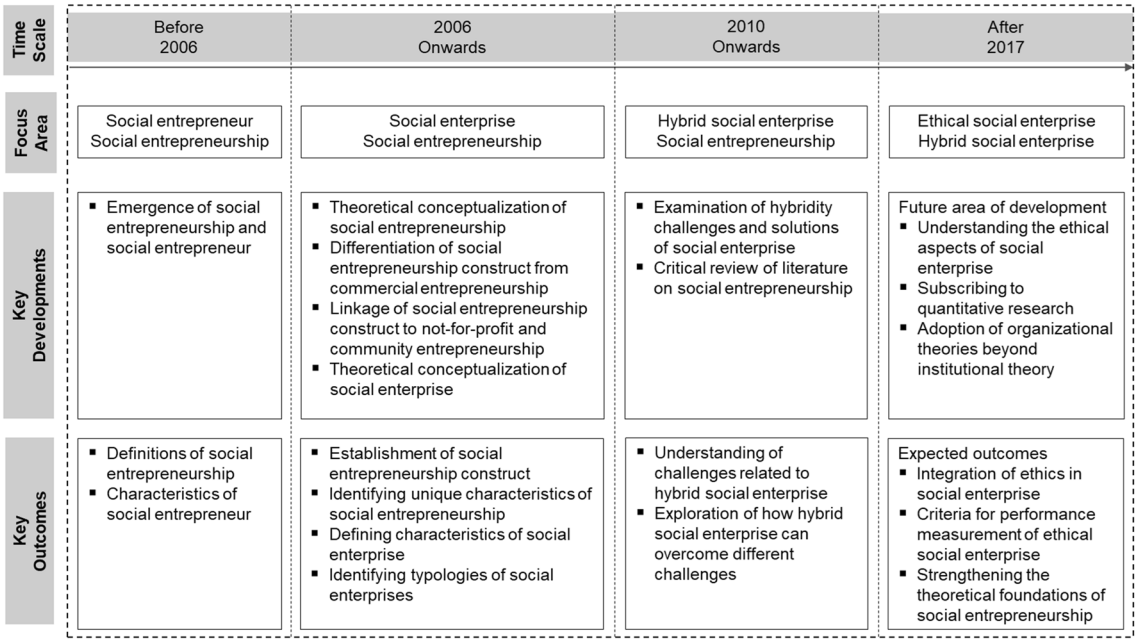

Fig. 6 Evolution of social entrepreneurship field

Around 2010, the concept of hybridity started gaining strength in the social entrepreneurship field as scholars began considering SEs as hybrid organizations (Pache and Santos 2013; Smith et al. 2013). The concept of hybridity started with the dual focus of the organization on social value creation and financial sustainability (Battilana et al. 2012; Mason and Doherty 2016; Moss et al. 2011; Nicholls 2009). The introduction of the concept of hybridity in social entrepreneurship marked a significant change in the research focus of the field, as it prompted scholars to examine different issues that SEs face as hybrid organizations, such as resource management, legitimacy, identity conflicts, and multiple institutional logic conflicts, and how they deal with such issues (Battiliana and Dorado 2010; Battilana et al. 2012; Liu and Ko 2012; Pache and Santos 2013; Smith et al. 2013). The proliferation of the hybridity concept in the social entrepreneurship field, with a focus on financial sustainability in addition to social value creation, led scholars to question the notion of assuming that anything social is by default ethical (Chell et al. 2016). This influenced scholars to examine the ethics of social entrepreneurship through a more critical lens. Figure 6 summarizes the above-discussed evolution of social entrepreneurship field. The 'After 2017' timescale in Fig. 6 captures the directions for future research.

Structure of the Social Entrepreneurship Field

Our analysis uncovers unique insights into the structure of the social entrepreneurship field. Social entrepreneurship research predominantly discusses the management areas of entrepreneurship (Cluster 5b) and organization theory (Cluster 7). A group of seminal articles on entrepreneurship (Cluster 5b), by Baker and Nelson (2005), Sarasvathy (2001), Schumpeter (1934), Shane and Venkatraman (2000), and Venkataraman (1997), form the basis of social entrepreneurship research by adopting an entrepreneurship perspective. From organization theory, it appears that social entrepreneurship scholars have predominantly borrowed institutional concepts such as legitimacy. This is evidenced by Subcluster 7a primarily consisting of seminal works related to institutions, by Dimaggio and Powell (1983), Giddens (1984), Granovetter (1985), Meyer and Rowen (1977), and North (1990), and Subcluster 5d representing articles that study social entrepreneurship from an institutional perspective. When we examine this finding in relation to past review studies, we discover that, while institutional theory has been adopted to study SE, other theories noted in past review studies, such as contingency and resource dependence, are not prominently applied.

With respect to methodology, qualitative research, specifically the case-based method, appears to dominate the empirical research on social entrepreneurship. This is evident from Clusters 7c and 8, which contain some of the seminal works on qualitative and case-based research methodology by Glaser and Strauss (1967), Eisenhardt (1989), and Yin (1994). Our finding supports earlier qualitative reviews (e.g. Hoogendoorn and Pennings 2010; Short et al. 2009) that highlighted the dominance of case-based research in SE. This demonstrates that the need for quantitative studies highlighted in many past review studies is

yet to be addressed by the scholars. Since SEs are increasingly considered exemplars of hybrid organizations, a separate group of work (Cluster 6) that studies SEs as hybrid organizations has emerged since 2010. We can thus observe that the scholars have adopted some of the future research areas identified in past review papers, specifically resource mobilization, performance measurement, and hybridity challenges. While we can identify a separate cluster for research on organizational aspects such as hybridity challenges, the other research areas, such as performance measurement and resource mobilization, are combined into a single cluster that signifies relatively less research on these areas.

An analysis of clusters at two different time periods, 2006–2011 and 2012–2017, reveals the change in the intellectual structure of the social entrepreneurship field. The first phase, 2006–2012, focused on the development of the field and hence contains clusters related to seminal works from multiple disciplines (e.g. Dimaggio and Powell 1983; Suchman 1995). However, the second stage focused more on the hybridity of SEs (Battilana and Lee 2014). This analysis acknowledges the importance of reviewing the evolutionary path of an emerging field such as social entrepreneurship over time, as it is influenced by the work of authors from multiple disciplines (Nerur et al. 2008).

Ethics and Social Entrepreneurship

Our analysis suggests that ethics is yet to be considered an important aspect in social entrepreneurship research. In all the three periods of analysis, 2006–2011, 2012–2017, and 1996–2017, no separate cluster on ethics emerged signifying that there are not many papers discussing ethics in a substantial manner. However, we could see that ethics has been part of the discussion, albeit in a limited way, from the beginning of social entrepreneurship research. Many works have noted the ethical nature of social entrepreneurs as a differentiating factor between social and commercial entrepreneurship (e.g. Dacin et al. 2010; Doherthy et al. 2014; Drayton 2002; Leadbeater 1997). Studies have also argued that social value encapsulates altruistic motives and values such as freedom, equality, and tolerance (Alter 2007; Choi and Majumdar 2014; Defourny and Nyssens 2010; Pearce 2003). This seems to be the dominant discourse on ethics in social entrepreneurship research—SEs are ethical because they create social value for society (Bull and Ridley-Duff 2018). Few studies have had a detailed discussion on ethics particularly highlighting the ethical challenges that social entrepreneurs face as they combine social and business missions (Santos 2012; Smith et al. 2013; Zahra et al. 2009). For instance, Smith et al. (2013) note that SEs face difficulty in evaluating the success of a social mission which are qualitative, ambiguous, and long-term oriented. They caution that a preference to quantifiable, clear, and short-term oriented metrics may lead business goals to become dominant. Similarly, Zahra et al. (2009) note that the egoism of social entrepreneurs may lead some of them to believe that anything they do to achieve their mission is ethically justified. As noted in the results & discussion section, even these few studies are being cited for reasons other than ethics. Overall, our analysis points to the need for more focused research on ethics in social entrepreneurship.

Directions for Future Research

Our review recommends future research directions for the methodology used and for the field of social entrepreneurship reviewed. Regarding methodology, three clear future research directions are recommended. First, it would be informative to conduct alternative analyses that complement our study to further understand the field. For example, a document co-citation analysis or a combination of a bibliometric study with content or topic analysis would not only allow for a better tracing of the intellectual structure of the field but also help to develop a set of directions for future research. Second, we compiled articles based on a keyword search. Future research could conduct analyses using articles from a specific journal or a list of journals to understand the field of social entrepreneurship. One final possible avenue for future research is to conduct co-citation analysis again after a few years. Our analysis from 2012 to 2017 suggests a separate cluster for hybridity, indicating that the idea of hybridity has been quickly integrated into the social entrepreneurship field. On a similar note, a future co-citation analysis may provide a separate cluster of ethics papers, perhaps as the result of the publication of the special issue in the *Journal of Business Ethics* (Chell et al. 2016) on the relationship between social entrepreneurship and ethics and subsequent papers.

Three future research directions related to the field of social entrepreneurship are recommended. First, our analysis of the linkages between social entrepreneurship and business ethics suggests that in the earlier stage of the development of the social entrepreneurship field, ethics was never explicitly questioned. By virtue of their social mission of serving others, SEs were considered ethical by default. However, with the increased focus on the financial sustainability of SEs that led to the hybrid organization form (Battilana and Lee 2014), scholars identified the need to critically evaluate SEs from a business ethics perspective. This led to a set of works examining the ethical challenges faced by social entrepreneurs and SEs (Zahra et al. 2009). However, there has been a very limited focus on understanding how social entrepreneurs and SEs can overcome the ethical challenges they face. The study by Andre and Pache (2016) is exceptional in this regard, which suggests that, while facing ethical challenges

during the scale-up of their operations, social entrepreneurs, as caring individuals, can attempt to incorporate their personal care ethics into organizational care. This can assist entrepreneurs in building a caring organization and enable the protection of the ethics of care. Clearly, additional, similar work must be conducted in this direction to understand how SEs can overcome ethical challenges.

The second avenue of future research pertains to the lack of research in social entrepreneurship from a resource-based perspectives, as evidenced by the lack of a cluster on resources. This is surprising, given that resources are as vital for SEs as for their commercial counterparts (Meyskens et al. 2010; Di Domenico et al. 2010). Moreover, owing to their unique operating condition of market failure and typical organizational characteristics of hybridity, SEs face greater challenges in mobilizing resources (Defourny and Nyssens 2010; Meyskens et al. 2010; Pache and; Santos 2012). Future research must thus consider resource theories, such as the resource-based view (Barney 1991) and resource dependency theory (Pfeffer and Salansik 1978), in analysing SEs.

The third area of future research relates to the comparison of hybrid SEs with pure not-for-profit organization in terms of the ethical challenges faced and how these are overcome. This is particularly crucial because the inclination towards hybrid organizational structures is increasing in the domain of social entrepreneurship. Finally, our work describes the social construction of the field at this point in time. It would be interesting to repeat this analysis in the future to evaluate how the field has evolved.

Limitations

Despite the objectivity of the methodology applied, the present work faces some limitations, which result from using citation counts for analysis. The study is limited in terms of the references that are included in the articles, since multiple reasons may exist regarding why authors reference a work in their paper. Authors often cite important works in an area, but in some instances, they also cite an article for the prestige of the journal it is published in. This is supported by academic work that has received more credit and reputation tending to receive even more credit and reputation and hence more citations in future scholarly works, a phenomenon called the Matthew effect in science (García-Lillo et al. 2017a).

One important limitation of co-citation analysis is the difficulty of ascertaining reasons for documents being cited (Gracia-Lillo et al. 2017a). In addition to articles being cited to support an argument, they can also be cited for factors such as methodology, quality, author, prestige of the journal, and so on. Hence, in some cases, co-citation analysis may not truly reflect the influence of an article. Another limitation of co-citation analysis is related to the maturity of a research field. Generally, a research project requires a certain amount of time to accumulate influence in a particular area (Gracia-Lillo et al. 2017a).

Also, citations may suffer from cronyism, a practice where researchers cite their friends and colleges more often (Cole and Cole 1974). Moreover, for different journals, editorial policies regarding references differ; some expect more references and others fewer, which impacts the choice of references in an article. Another limitation relates to articles requiring time to be cited. Thus, articles published near the end of our study period would have been cited less often compared to articles published earlier, which might have resulted in the underrepresentation of recent influential works.

Finally, as bibliometric analysis assumes the accumulations of knowledge, where one paper builds upon another, it is a less suitable tool for new topics in social sciences. Bibliometric analysis may also be constrained in providing inferences on topics that are developed based on societal influences or the interests of individual scholars. Therefore, the spread and fragmentation of the topics observed in bibliometric analysis must be considered with this caveat of stand-alone development (i.e. parallel development without possessing common references) of the same topics.

In summary, the results of our study uncover the intellectual structure of the social entrepreneurship field by reviewing the most influential works and highlighting linkages among these works. This helps to uncover the "invisible colleges" (White and Griffith 1981) within social entrepreneurship research and visualize the relationship between different pockets of intellectual activities. Such an understanding aids in discovering the theoretical, conceptual, and empirical classics that have contributed to the growth of the social entrepreneurship field and thereby contributes to the theoretical advancement of the field. Our analysis also meaningfully complements other previous qualitative and quantitative reviews in the field.

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Compliance with Ethical Standards

Conflict of interest All the authors declare that they have no conflict of interest.

Research Involving Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent There were no human participants involved in this study, and hence, informed consent is not needed.

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