

## Article

# What Sustainable Development Goals Do Social Innovations Address? A Systematic Review and Content Analysis of Social Innovation Literature

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**Abstract:** Interest in social innovations (SIs) from both the academic and the policy side is growing. Nonetheless, we still know little about which sustainable development goals (SDGs) SIs already address. Furthermore, only little is known about who the innovators developing and implementing SIs are. In this paper, we aim to bring more clarity and structure to the field of SIs. Firstly, a systematic literature review was conducted, before a content analysis was used to analyze the definitions used with regard to similarities. Secondly, all case studies described in the reviewed articles were then further systematically analyzed in order to identify the social or environmental problems addressed and the innovators involved. For the purpose of classifying the diverse types of problems, we used the globally known and broadly accepted 17 sustainable development goals (SDGs). Results showed that most SI case studies deal with an improvement of health and well-being. Furthermore, our study illustrates that there is a pronounced difference in the focus of SIs between developing and developed countries. Concerning the innovators, our results indicate that five types of innovators are fundamentally involved in developing and implementing SIs: social entrepreneurs, NGOs and non-profits, public institutions, civil society, firms, and social enterprises. Our definition analysis as well as the identification and classification of the innovators and addressed social needs bring much-needed clarity and structure to the field. However, our systematic review shows that SI is still in its infancy and it will be interesting to see where the field will head.

**Keywords:** social innovation; systematic review; content analysis; social entrepreneurship; sustainable development goals (SDGs)

## 1. Introduction

The concept of social innovation (SI) has gained significant attention and interest in recent times. This attention can be observed in (inter)national policies and strategies. The EU, for example, grants SI the same importance as traditional innovation [1] or, in 2009, US President Barack Obama opened the “Office of Social Innovation and Civic Participation” [2]. Turning to the regional and local level, SI is fostered through different approaches such as social (innovation) incubators [3]. SIs are considered suitable for solving many of the most challenging problems facing today’s society and for mitigating inequalities inherent to traditional solutions [4,5]. They address a wide-ranging field (e.g., from sustainable consumption [6,7] to health issues [8,9] or from sustainable energy [10,11] to sustainable cities and communities [12–14]). Even though SIs have only gained attention and interest in the 21st century, SIs per se have existed since the beginning of humankind [15]. For example, the introduction of the first insurances and provident funds in the mining sector in central Europe in the 13th and 14th century [16,17], had distinctive SI characteristics. It is said that Benjamin Franklin (18th century)

introduced several SIs during his lifetime [18] and Friedrich Wilhelm Raiffeisen, the founder of the Raiffeisen bank, which still exists today, can clearly be considered a social innovator of the 19th century [19]. An example of an SI from the 20th century is provided by the development of the Quebec community-housing sector [20].

The concept of SI has not only garnered attention and interest in policies and practice, but also in academia. The academic attention and interest can be observed, for example, in the increasing number of published papers in the field [21,22]. Despite, or more probably, precisely because of the rapidly growing interest, the field is often considered to be a vast ‘maze’. Some authors question whether social innovation is, in fact, no more than a buzzword [23], while others call it a “container concept” without any agreed-upon definition [7]. The prevailing chaos in the field and the importance of SI for solving or at least mitigating social issues for a better and more sustainable future served as motivation for systematically reviewing the SI literature and conducting a content analysis.

Besides the frequently raised issue relating to the absence of an agreed definition of SI [7,24,25], there is also no consensus on who the innovators involved in developing and implementing SIs actually are. For instance, in some research SI is exclusively linked to social entrepreneurship and intrapreneurship [26]; other authors claim that SI is often used interchangeably with the terms social entrepreneurship and social enterprise [27], while a third research stream stresses that social innovation can be performed by many different actors, such as governments, non-profit organizations or individuals [28]. Additionally, while we know that SIs address a wide range of social needs, we have no knowledge about which social needs are addressed most intensively, and which social needs are only rarely addressed by SIs.

Therefore, the aim of this research is to bring some clarity and structure to the academic discussion on SI. Firstly, we strive to find out how the constantly growing field has evolved from a bibliometric perspective. For this purpose, the most common publication outlets, the most frequent research methods, the prevailing authors and the countries of their institutions are identified. Existing literature reviews [21,23,29,30] provide the starting point for our investigation. In a first step, we update these reviews systematically, which is necessary, as the number of scientific publications has risen sharply in recent years. Secondly, related to the previously mentioned absence of a generally agreed definition, we aim to discover if there are similarities and common aspects within the wide range of SI definitions. Thirdly, concerning the actors, we aim to find out which innovators are involved in the development and implementation process of scientifically approved SIs. Fourthly, regarding the social needs, we investigate which different social needs are addressed in scientifically approved SIs and which social needs are only rarely addressed or even ignored altogether. Moreover, recording the country where the respective case study occurs allows us to further differentiate between developed and developing countries. Thus, we provide a first approach to closing the research gap identified by Agostini, et al. [31], who proposed an analysis of how and to what extent the context influences SIs and if there are differences in SI initiatives in different social contexts.

For the purpose of classifying the different social needs, we use the United Nations’ 17 Sustainable Development Goals (SDGs), which are well-known and accepted both academically and politically, and which recommend action in numerous social and environmental fields [32]. Thus, we propose and apply a categorization system for the diverse social needs in the field of SI.

This article is organized as follows. Section 2 describes the applied research methods as well as the analyzed sources. Section 3 shows the results of our literature analysis, the results of our definition analysis, as well as the results of our case study content analysis investigating the innovators and the social needs. The results are then further discussed in Section 4. The paper ends with a conclusion, encompassing the contributions and limitations of the study as well as possible avenues for future research.

## 2. Methods and Materials

### 2.1. Research Method

Three interrelated research methods have been applied in order to carry out the research. Firstly, we used a systematic literature review, which, unlike a ‘classical narrative review’, is characterized by the use of a rigorous, replicable, scientific, and transparent process [33–35]. In practice, the specific process of the systematic literature review is often divided into stages, usually three to five in number [36,37]. Our systematic review is best described by the three stages (planning the review, conducting the review, and reporting and disseminating the results) described by Tranfield, et al. [38]. In the planning phase, we did not only decide which databases to use, but we also determined which filters or, more precisely, which exclusion and inclusion criteria have to be applied (Table 1). Furthermore, it was determined which data to capture and how to handle the large amount of data in practical terms. In the time-consuming realization phase, all identified articles were screened. Articles placed somewhere between inclusion and exclusion were critically discussed in a team of researchers. In the last phase, the reporting and disseminating phase, we made the final decision on what to report and how to present our results.

**Table 1.** Inclusion and exclusion criteria for systematic review.

Inclusion Criteria	Exclusion Criteria
All publication types included in WoS or EBSCO	Term SI not being contained in abstract
Articles published between 2003 and 2017	Articles not published between 2003 and 2017
All research methods	Articles not in English, Italian, German
Publications in English, Italian, German	No access to article
All countries and all topics	

Secondly, the documents identified in the systematic literature review were further analyzed using a content analysis [39–42]. Here, Mayring (2000) distinguishes between a deductive and an inductive category application approach [39]. The definition analysis followed an inductive approach and neither pre-existing frameworks nor pre-existing elements/aspects were used. Based on the results of the systematic literature review, a content analysis was carried out to identify central aspects among the diverse definitions. In a first step, a sub-sample of definitions was analyzed. The sub-sample contained approximately the same number of definitions from the highest SJR ranked journals (SJR of 1.7 and above; 21 definitions) and from the highest Web of Science (WoS) ranked journals (WoS impact factor of 3.2 and above; 19 definitions). In order to avoid exclusive dependence on impact factors, the definitions of the most common authors were also included in the sub-sample (authors with 3 and more publications; 23 definitions). By analyzing the content of the definitions, five common aspects (innovative element, improvement, social need, relationships and collaborations, implementation and execution), which occurred in at least 50% of the analyzed definitions, were identified. The five identified aspects were then used as a framework for the analysis of the remaining definitions.

Knowing from previous studies that most publications in the field of SI are of a qualitative nature and, more precisely, much research is based on case studies [29–31], the content analysis for the identification of the innovators and social needs was based exclusively on case studies published in scientific journals. For the social needs, we followed a deductive approach [39,42] and used the SDGs as coding frame. Concerning the social innovators, an inductive approach [39,43] without any previously existing coding frames was chosen.

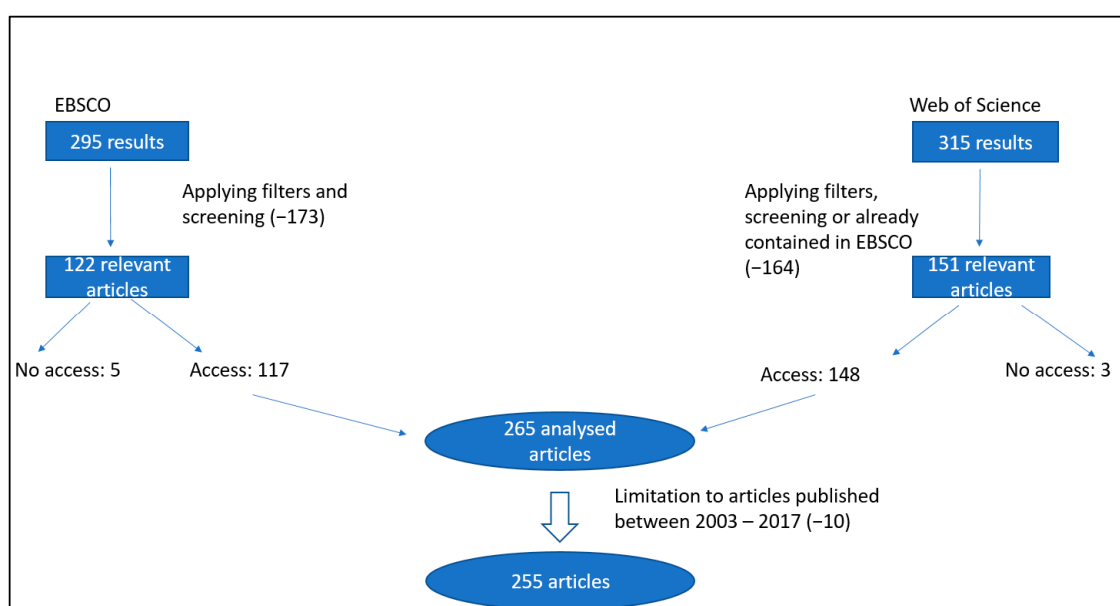
Thirdly, we statistically combined and summarized the above-mentioned content, which in academia corresponds to the characteristics of meta-analysis [44]. Originally, meta-analysis has its background in clinical and medical research [43], where quantitative results of previous studies were summarized and consolidated (quantitative meta-analysis) [45,46]. As in our case, meta-analyses are usually based on previous systematic reviews [47]. However, instead of the quantitative meta-analysis

approach, we followed the more recent approach of qualitative meta-analysis [48]. This new approach aims to deliver a comprehensive picture of results across several qualitative studies, which investigate the same general research topic [49].

## 2.2. Literature Selection

The literature search was performed between January and March 2018. The articles were retrieved from the Web of Science and EBSCO database. While the first database tends to contain articles from journals with higher impact factors and has a strong coverage reaching back to the 1990s [50], EBSCO is known for including articles from a wider range of sources. The search terms entered were “Social Innovation” and “Social Innovat\*” in the title and we used the ‘apply related words’ function in EBSCO.

As Figure 1 reveals, the initial search led to 295 results in EBSCO and 315 results in Web of Science.



**Figure 1.** Systematic literature collection process.

After applying our exclusion and inclusion criteria (e.g., all articles in English, German, and Italian) and screening the abstracts of the articles (e.g., articles in which SI was only in the title but not contained in the abstract were excluded), 122 relevant articles from the EBSCO database remained. Following the same procedure using the Web of Science database and additionally excluding duplicates (articles already contained in the EBSCO data sample), 151 relevant articles were identified. In the case of 8 articles, we had no access and further 10 articles were excluded by limiting the publication years to a 15-year interval (2003–2017).

## 2.3. Literature Analysis

Once the 255 articles had been retrieved, a database suitable for our research aim was developed. The articles were inserted into the database according to well-known bibliometric characteristics (e.g., author and institution of author, year, journal, research method). Furthermore, the definitions for SI used or referred to in each article were captured and analyzed according to the previously identified five aspects: (1) innovative element, (2) improvement, (3) social need, (4) relationships and collaborations, and (5) implementation and execution. The definition analysis was undertaken with the help of a qualitative data analysis computer program (NVivo 12 Plus, QSR International Doncaster, Victoria, Australia). Hereby, the five SI aspects were inserted as the coding frame and all definitions were coded.

All articles focusing on case studies and using case study as their research method, were further analyzed in terms of content by a team of researchers. Even though we limited the publication years to the period from 2003 to 2017, five case studies were ‘historical case studies’. Due to our motivation to find out what types of social needs are addressed by SIs today, these five articles were excluded from the content analysis. The excluded historical case studies considered, e.g., the creation of the first National Park in the USA in 1864 [22], Urban Development Strategies in Belgium starting from the 1970s [51], or Raiffeisen, who lived in the 19th century and was the founder of credit and agricultural co-operatives in Germany [19].

Given the wide topic range of social needs addressed by SI case studies, we found it indispensable to use a categorization system to bring some structure to the field. Since we could not find any suggested or previously used categorization system for social and environmental problems in the systematic literature review and in additional extensive research, we decided to use the SDGs provided by the United Nations. The 17 individual SDGs systematically address a large range of issues, particularly in comparison with the rather narrowly defined Millennium Development Goals [52]. Besides addressing a broader range of issues, the SDGs also aim to be universal and thus applicable to all countries, developing and developed countries alike [53]. This universal applicability and the coverage of a wide range of the most burning issues were achieved by an enormous ex-ante consultation process with 5 million people from 88 countries in all of the world’s regions [52]. Besides the expected thematic fit, the wide topic range and universal applicability, another reason for using the SDGs as a categorization system was their global prominence. Particularly in the research community, the SDGs are well known. A recent worldwide survey among universities showed that 78% of those surveyed are knowledgeable or very knowledgeable about the SDGs, while only 22% of the universities declared little to no knowledge about the SDGs [54]. The worldwide prominence is further fostered due to the fact that the SDGs are not only discussed in the six official languages of the United Nations [55], but through national programs and initiatives they are also translated and promoted in several dozen other languages. Concerning the content analysis itself, it is important to mention that we categorized the social problems according to the 17 main categories and their descriptions.

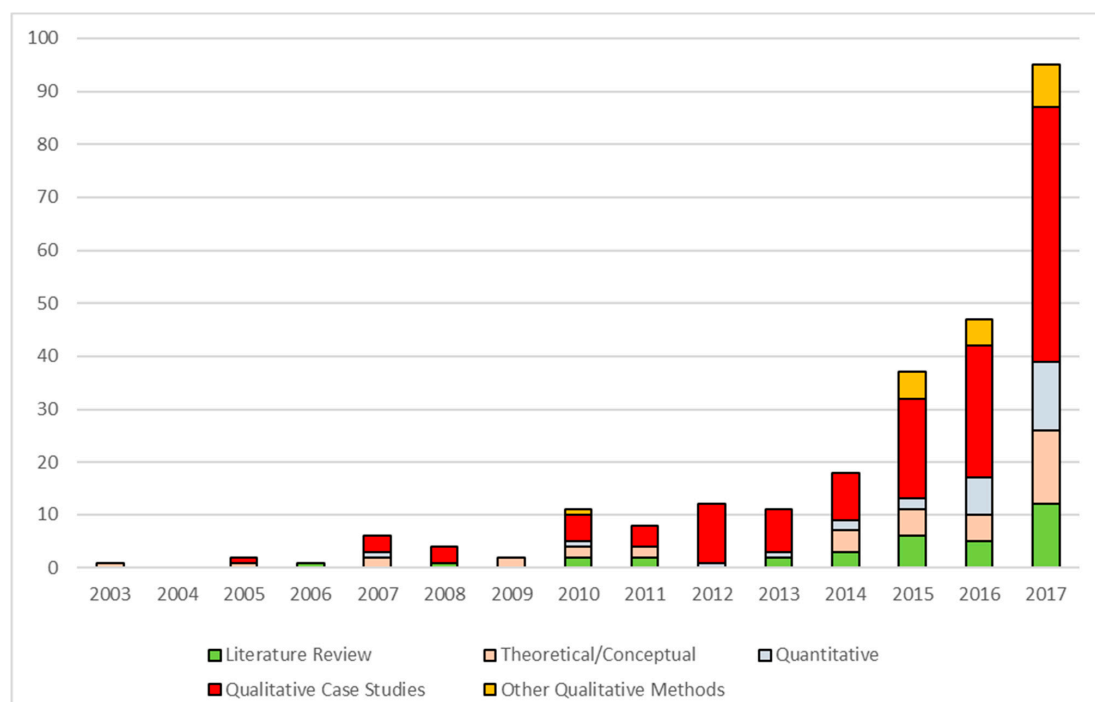
The social innovators, thus the initiators and key actors for solving (or at least mitigating) the social needs, were coded without any pre-existing coding frame. The coded segments were discussed and debated within the research team as well as at international conferences. Finally, five types of social innovators emerged from this process: (1) social entrepreneurs (and individual citizens), (2) NGOs + non-profits, (3) public institutions, (4) firms, (5) civil society (group of citizens).

Additionally, we captured the country in which the described SI occurs and classified it as developing or developed country. As a reference for describing the development level of the countries we used the “2018 World Economic Situation and Prospects Report” of the United Nations [56]. Note that, besides developed and developing economies, the UN has a third category: “economies in transition”. For the purpose of this study, “economies in transition” were considered as developing economies.

### 3. Results

#### 3.1. Bibliometrics

As can be observed in Figure 2, the field of SI gained significant academic interest from 2010 onwards. With only six published articles in 2007, the number of publications multiplied by more than 15 within 10 years, reaching 95 publications in 2017. Qualitative research methods, being more precisely research-based on case studies, were and are the predominant research method in the field of SI. Of the 255 articles, 136 articles relate to case studies (53%). Theoretical and conceptual papers, literature reviews as well as quantitative research have gained more attention in the last three to four years. Other qualitative methods, such as mixed method or observation, only became important in 2017.



**Figure 2.** Development of research methods over time.

The scholars who published most articles are Frances Westley (Canada, seven articles), Nadia von Jacobi (United Kingdom, four articles), and Rafael Ziegler (Germany, four articles). Fifty persons published at least two articles as author or co-author, while 534 persons were named in no more than one publication. By looking at the three most active authors above, one might get the deceptive impression that the field of SI is female-dominated. However, a closer look at the 50 most frequent authors showed us that the field tends to be largely balanced between the two genders (28 male authors vs. 22 female authors).

The authors have university or institutional affiliations in 47 different countries. According to their affiliations, most authors come from the United Kingdom (102), followed by the USA (54) and Italy (54). Next in line were Canada (48), Brazil (47), and Spain (44) with very similar numbers. No significant differences could be observed concerning preferences for certain research methods in the given countries.

Most articles were published in *The Design Journal* (10 publications), followed by *Innovation: The European Journal of Social Science Research* (9 publications), and *Ecology and Society* (9 publications). As Table 2 shows, in the analyzed 15-year period, 35 journals contained between two and eight publications related to SI, while a large number of 115 journals contained only a single article. Furthermore, it can be observed that most journals with a higher number of SI publications have only recently started to publish in the field. Most of them are ranked in SJR and/or WoS, which indicates a certain quality standard. A significant proportion of the articles appeared in special issues. A closer analysis of the journals containing at least three articles (22 journals) showed that 10 journals published special issues in which most, if not all articles were contained. Analyzing the fields of all journals that have published at least two articles (38 journals) showed a tendency for SIs articles to be published in innovation journals (5) rather than in entrepreneurial journals (2). A large majority of SIs articles, however, are published neither in typical innovation nor in typical entrepreneurial journals. The range of journal fields appears to be almost infinite, ranging, e.g., from design to ecology and from the urban/regional field to the field of sustainability.



**Table 2.** Journals publishing SI research (\*articles were mostly or exclusively contained in special issues).

Journal	Number of Pub.	Journal Key Topics	Year	Ranking (2017)
The Design Journal *	10	Design in cultural and commercial contexts	2017	-
Innovation: The European Journal of Social Science Research	9	European focus on policy, politics, citizenship, culture and democracy	2017, 2016, 2015, 2013	1.02 (WoS)
Ecology and Society	9	Sustainable social-ecological-political systems	2017, 2016, 2014, 2011, 2010	1.73 (SJR) 3.26 (WoS)
Journal of Human Development and Capabilities *	8	Human development, capability expansion, poverty eradication, social justice, human rights	2017	0.61 (SJR) 0.76 (WoS)
Revista de Administração Mackenzie *	7	Human and social management in organizations; strategic finance; resources and entrepreneurial development	2016, 2017	-
Information Systems Management *	6	Diverse subsystems within organizations (e.g., innovation, communication, management, valuation skills)	2014	0.53 (SJR)
Technological Forecasting & Social Change	6	Futures studies, technology assessment, technological forecasting	2014, 2015, 2017	1.38 (SJR) 3.13 (WoS)
Journal of Social Entrepreneurship *	5	Social entrepreneurship, particularly related to third and public sectors	2016, 2017	0.61 (SJR)
Creativity Research Journal	4	All approaches to creativity (e.g., behavioral, clinical, cognitive, cross-cultural, developmental, educational, organizational)	2002, 2007, 2013, 2014	0.60 (SJR) 2.26 (WoS)
Proceedings of the European Conference on Innovation and Entrepreneurship	4	Innovation and entrepreneurial topics (e.g., entrepreneurial education, social innovation, entrepreneurship of women)	2017	0.10 (SJR)
Urban Studies	4	Urban studies and changes taking place in cities and regions	2005, 2017	1.62 (SJR) 2.60 (WoS)
International Journal of Technology Management *	4	Management of engineering, science and technology	2010	0.41 (SJR) 0.87 (WoS)
Techne-Journal of Technology for Architecture and Environment *	4	Architectural technology, for protecting and enhancing the man-made environment	2017	-
European Journal of Innovation Management	4	All aspects of innovation	2015, 2016	0.45 (SJR) 1.39 (WoS)
Journal of Business Research	3	Business topics with a focus on the application of business theory	2015, 2016	1.26 (SJR) 2.51 (WoS)
Human service organizations: Management, Leadership & Governance	3	Management, leadership, and governance of non-profit and public sector human service organizations	2015, 2016	0.37 (SJR) 0.84 (WoS)
Annals of Public & Cooperative Economics	3	Topics related to public, cooperative or non-profit economics (e.g., employee participation, microfinance, government finance)	2012, 2017	0.50 (SJR)

Table 2. Cont.

Journal	Number of Pub.	Journal Key Topics	Year	Ranking (2017)
Design Issues	3	Design history, theory, and criticism; cultural and intellectual design issues	2007, 2008, 2014	0.45 (SJR)
European Urban & Regional Studies *	3	Urban and regional development in Europe	2007, 2016	1.18 (SJR) 2.28 (WoS)
Design and Culture *	3	Design as a cultural phenomenon, design's relation to other academic disciplines	2015	0.14 (SJR)
Voluntas: International Journal of Voluntary and Nonprofit Organizations	3	Research in the area between the state, market, and household sectors	2015, 2016	1.27 (WoS)
Pertanika Journal of Social Science and Humanities *	3	Emerging issues pertaining to the social and behavioral sciences	2017	0.16 (SJR)
Corporate Social Responsibility and Environmental Management	2	Social and environmental responsibilities of organizations, sustainable development	2017	1.71 (SJR) 4.9 (WoS)
Journal of Technology Management & Innovation	2	Technology, innovation, business, strategy, international management. Focus on Latin-Ibero-America and Caribbean	2013, 2016	0.27 (SJR)
Journal of Cleaner Production	2	Cleaner production, environmental, and sustainability research	2015, 2016	1.47 (SJR) 5.65 (WoS)
Innovation: Management, Policy & Practice	2	Topics of innovation (e.g., technology strategy and transfer, diffusion of innovation, research management)	2014, 2017	0.33 (SJR) 0.92 (WoS)
Theoretical & Applied Economics	2	Economy and related domains	2015	-
International Journal of Productivity & Performance Management	2	Performance/productivity management and measurement	2008, 2016	0.58 (SJR)
Strategic Change: Briefings in Entrepreneurial Finance	2	Entrepreneurship, economics, business strategy and finance	2013, 2015	-
International Small Business Journal	2	Entrepreneurship, small business, economics	2012, 2013	1.98 (SJR) 2.53 (WoS)
Energy Policy	2	Energy policy, energy supply	2007, 2017	1.99 (SJR) 4.01 (WoS)
Sustainability	2	Cultural, environmental, economic and social sustainability of human being	2017	0.54 (SJR) 2.08 (WoS)
Science Technology and Society	2	Science and technology and their influence on society	2014, 2017	0.71 (WoS)
Sociologia Ruralis	2	Social, political and cultural aspects of rural development	2016, 2017	0.74 (SJR) 2.63 (WoS)
Service Business	2	Profit and non-profit areas of the service sector	2011, 2016	0.55 (SJR) 2.11 (WoS)
Social Enterprise Journal	2	Social enterprise and social entrepreneurship	2017	-
Policy & Politics	2	Policy-making and implementation	2015, 2016	0.92 (SJR) 1.25 (WoS)
Industry and Innovation	2	Qualifying open innovation, innovation and international business, innovation in the entrepreneurial process	2015, 2017	0.76 (SJR) 1.34 (WoS)



### 3.2. Definitions

Having captured and inserted the used or referred definitions of SI into our database allowed us to analyze the definitions used in case studies separately from the definitions used in articles based on other research methods. While 83% of the case studies contained a definition for SI, this number was even higher (91%) for the non-case study articles.

Since no differences between the definitions used in case studies and the definitions used in articles based on other research methods were identified, this differentiation is disregarded in the presentation of results. As explained in Section 2 (research method), the definition analysis was conducted based on the results of our prior sub-sample analysis. As shown in Table 3, a social need is mentioned in 188 out of the 222 definitions (84%). A common synonym for the social need aspect was “social problem”, “social challenge”, or “social issue”. Several authors used definitions, which include the term “social need” and “social problem”, defining SI, e.g., as “any novel and useful solution to a social need or problem . . . ” Phills (2009) [57]. In 163 definitions (73%) the innovative element was present and indicated by terms such as “new”, “innovative”, “novel”. Also, the implementation and execution aspect, indicating that a social idea needs to be implemented to be considered a SI, was contained in the majority of definitions (61%). Instances where a SI was described as a “product” or “process” led us to conclude that the SI has already been implemented and is no longer at the ideation stage. About half of the definitions stressed that SIs need to deliver an improvement compared to the present solutions (described by “increasing” or “more effective”). Also, about half of the definitions emphasized that SIs need to foster new relationships and collaborations, often indicated as the goal of SI to “enhance society’s capacity to act”.

**Table 3.** Analysis of referred and used definitions for social innovation.

Social Innovation Element	Number of Definitions Containing Common Aspect
Social need	188 (84%)
Innovative aspect	163 (73%)
Implementation and execution	136 (61%)
Improvement	116 (52%)
Relationships and collaborations	114 (51%)

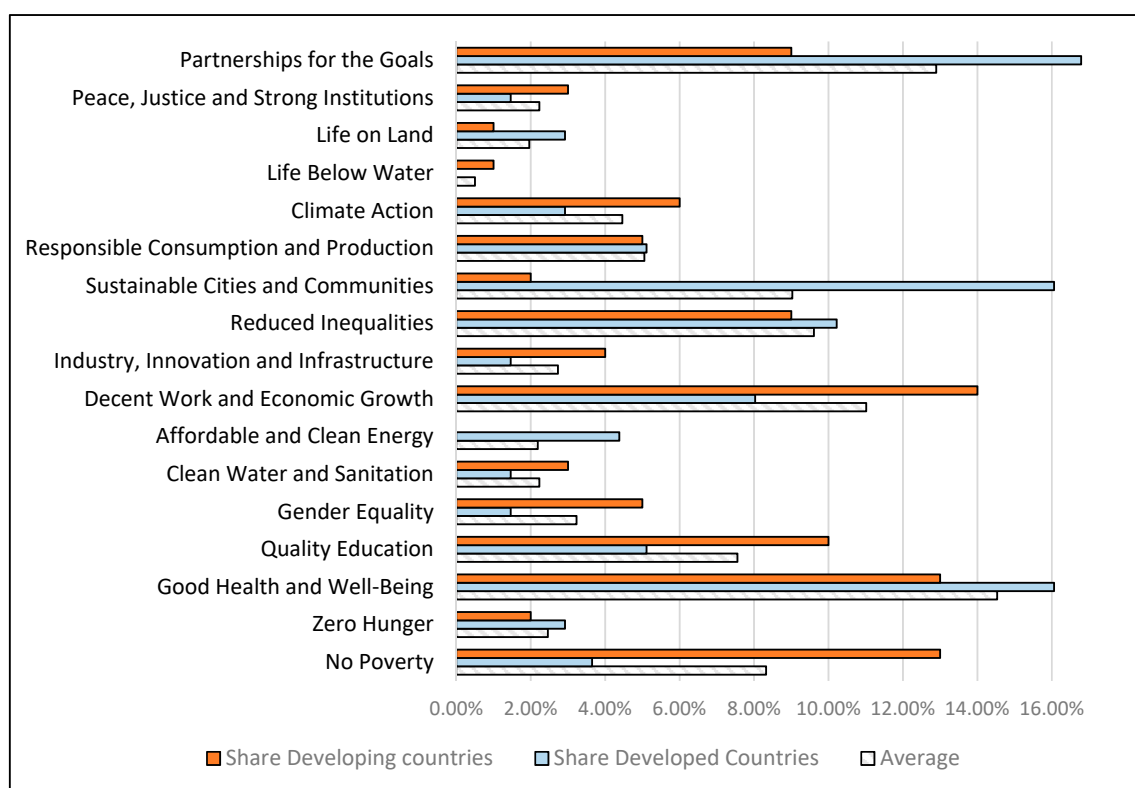
### 3.3. Content Analysis of SI Case Studies

The initial starting point for analyzing the addressed social needs were the 136 case studies. Of these, five historical case studies and three case studies for which no country could be identified were excluded. For 115 case studies, the social problem/need allowed classification according to one or several SDGs. For 13 case studies (11%), it was not possible to assign any SDG, since they dealt with topics not captured by the SDGs, e.g., success factors of social open innovation [58] or the analysis of different SI dimensions [59].

Out of the 115 case studies, 79 occurred in developed countries and 36 in developing countries. In total, 237 SDGs were assigned, leading to an average of 2.1 SDGs per case. While 1.7 SDGs per case were assigned on average for the case studies in developed countries, this number was higher for developing countries (2.8 SDGs per case). Due to the unequal number of case studies occurring in developed countries compared to case studies in developing countries, for further analysis, percentages instead of absolute numbers were used.

As Figure 3 reveals, the SDG assigned most frequently, independently of the economic development level of the country, was “good health and well-being” followed by “partnerships for the goals” and “decent work and economic growth”. The most widespread SDGs addressed in SI case studies in developed countries were “partnerships for the goals”, “sustainable cities, communities, and good health and well-being”. In developing countries, instead “decent work and economic growth”, “good health and well-being”, and “no poverty” were the most frequently assigned SDGs. In developing countries, no case study was assigned to “affordable and clean energy”, while in developed

countries no case study dealt with “life below water”. About the same percentage of case studies in developed and in developing countries targeted the SDGs “responsible consumption and production” and “reduced inequalities”.



**Figure 3.** Distribution of SDGs in developed and developing countries.

Furthermore, the innovators fundamentally involved in developing and implementing the respective SI were captured and analyzed. For the 79 case studies occurring in developed countries, 141 innovators were identified (average of 1.8 innovators per case study). Similarly, for the 36 case studies in developing countries, 70 innovators were identified (average of 1.9 innovators per case study). To permit a better comparison in terms of the analysis of the innovators, percentages were calculated.

While in developed countries, the most prevalent innovators are public institutions (e.g., national or regional governments, politicians, mayors, unemployment agencies), in developing countries the most prevalent innovators stem from the civil society, defined as a group of individuals. For the other innovator categories, only minor differences concerning their frequency in the two country groups could be observed (Table 4).

**Table 4.** Innovators developing and implementing the SI.

Innovator	Developed Country	Developing Country
Social entrepreneurs + individuals	19 (13%)	13 (19%)
NGO + non-profit organizations	23 (16%)	12 (17%)
Public institutions	38 (27%)	13 (19%)
Firms + social enterprises	29 (21%)	14 (20%)
Civil society	32 (23%)	18 (25%)

#### 4. Discussion

Our systematic literature review showed that the interest in SIs is growing rapidly in academia. The growing interest has already been identified by several previous systematic literature

reviews [21,30]. Since previous literature reviews were limited to articles published in or before 2014 and partly go back to 1955 [23], the interpretations of the number of publications per year in previous research were not surprisingly different. Van der Have and Rubalcaba (2016), who analyzed articles from 1986 until 2013, claimed that the emergence phase of SI was from 1986 to 2002/2003, when the take-off phase started [29]. However, looking at the 15-year (2003–2017) interval in this article, it is clear that the take-off phase did not start before 2010 (Figure 2).

Concerning the most active authors in the field of SI, the results of this study partly show similar results to previous studies. For example, Frances Westley (seven published articles), who is the most common author according to our research, was identified as the second most productive author (three articles) in 2013 [30]. *The Design Journal*, the journal with most publications in this study (10), was not included in any previous systematic reviews [21,30,31]. This can be explained by the simple fact that all 10 publications in *The Design Journal* belong to a special issue and were published in 2017. The second most frequent journals *Ecology and Society* and *Innovation: The European Journal of Social Science* (both with nine articles) have already been identified in previous studies as important outlets in the field of SI [21,30]. Among the 22 journals containing at least three articles, there were 10 special issues in recent years. Therefore, even if SI articles are published in a wide range of journal fields, a certain tendency can be observed, following which they are often published as part of special issues.

Our analysis showed that the most widespread research method always was and still is case studies. In the work of Agostini, et al. [31], case studies were also identified as the most frequent research method. However, in other studies, the case study was identified as the second most common research method [30]. Differences here can be explained by both, different time intervals as well as the use of different databases. It was only in 2014 that other research methods, (e.g., quantitative methods, literature reviews) in the field of SI slowly began to gain attention. The fact that quantitative research methods ‘follow’ qualitative research methods is a typical phenomenon in new fields and can be explained by the different characteristics and aims of the two research approaches. While qualitative research focuses on the why (instead of how much) and the data is based on own categories of meaning, quantitative research focuses on testing and validating theories or hypotheses and tends to deliver generalizable results [60]. In literature reviews, existing literature in a certain field or addressing a certain topic is reviewed and analyzed. Therefore, SI literature reviews only began to gain academic interest after a certain number of studies based on other methods had been published.

Overall, the systematic literature review demonstrates how rapidly certain elements change in a field such as SI, which is growing almost exponentially. There are some authors, journals as well as countries that stand out in this research, but in such a growing field, more time must pass before key authors, key journals as well as key countries with a lasting impact can be determined.

Due to the absence of a generally agreed definition, the concept of SI is often discussed and criticized. While some authors question whether it is no more than a “buzzword” [7], others no longer even consider it a scientific concept [61]. Without a generally agreed definition, it is difficult to measure the impact of SI (e.g., social return on investment). Edwards-Schachter and Wallace (2017) stated in their research that a definition for SI is often avoided or ignored [23]. Similarly, in our sample, 17% of the case study and 9% of the non-case study articles did not contain any definition at all. A possible explanation might be that authors want to avoid the debate and criticism related to defining SI.

While Edwards-Schachter and Wallace (2017) dedicated their research to the endeavor to simplify the ‘maze’ of SI definitions by showing how the conceptualization of SI has changed over time and by identifying three core meanings (process of social change, sustainable development and service sector) [23], we aimed to find out how similar (or how different) SI definitions actually are.

The fact that we successfully identified at least three to four of the five aspects (namely 1) social need, (2) innovative element, (3) implementation and execution, (4) improvement, (5) relationships and collaborations) in the analyzed definitions, shows that most SI definitions are quite similar. The social need aspect was contained in 84% of the definitions. Without any doubt, SIs address social needs, an aspect often considered when comparing SIs with technological innovations. Similarly, the

aspect relationship and collaborations (in 51% of the analyzed definitions) is an element, which is not usually contained in the traditional field of innovation. The second most frequently identified element, the innovative aspect (in 73% of the analyzed definitions) and the third most frequent element, the implementation and execution aspect (in 61% of the analyzed definitions), are also covered in the traditional field of innovation. The improvement aspect, which was identified in 52% of the definitions, can be both: a typical SI aspect when, e.g., improving a social issue or mitigating a social need, or an aspect of the technological and traditional innovation field dealing with improvements in a technological and/or general context. Even though, from a linguistic point of view, there might be minor differences between synonyms such as “new and novel” or “social need, social problem, social challenge and social issue”, we doubt that these minor differences are fundamental in the field of SI. Furthermore, it can be observed that many authors come up with their own definitions by using synonyms instead of citing an existing definition. This phenomenon reminds us of toothbrushes: basically, they are all the same but still everybody wants to have his/her own. One reason why so many authors create their own definition instead of referring to an existing one could also be explained by the fact that the field is still relatively young and authors might hope that their definition will prevail in the future.

Summing up, we can say that instead of the previously described ‘maze’, we found out that five common aspects of SI are contained in many of the analyzed definitions.

Therefore, we avoid phrasing a new definition and instead define SI as an event containing the following five aspects: social need, innovative element, implementation and execution, improvement, relationships and collaborations. By defining SIs with aspects instead of a phrased definition, we avoid the issue surrounding the use of synonyms and related terms. Particularly for a young field like SI, it is first necessary that common aspects are settled and accepted before definitions are affixed to certain terms.

An existing definition covering all five identified aspects is the definition offered by The Young Foundation:

Social innovations are new solutions (products, services, models, markets, processes, etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act (Murray, Caulier-Grice, Mulgan—The Young Foundation, 2010 [62]).

That a generally agreed definition would be important for the field remains beyond dispute. However, only time will show whether a definition like “the doing of new things or the doing of things that are already being done in a new way” (Schumpeter, 1947) [63] as applied to the traditional innovation field, will eventually also stand out in the field of SI. Until then, the infant academic field of SI has to deal with similar issues to those prevailing in any young academic field; e.g., in the related field of social entrepreneurship researchers deal with similar issues and ask for a clearer definition as well [64].

Being able to assign 89% of the SI case studies to one or several SDGs clearly showed that the SDGs are a suitable categorization system in the field of SI. The uniqueness of the SDGs as a categorization system is that they represent direct social needs as well as indirect social needs. Especially the SDGs ‘climate action’, ‘life below water’, and ‘life on land’ deal with the environment and its protection, which undoubtedly is a social need. As our analysis shows, direct needs, such as ‘no poverty’ and ‘good health and well-being’ are predominant in SI literature. Nevertheless, our analysis also shows that there are SI case studies addressing indirect social needs (environmental topics), stressing the importance of including them in the classification system.

The fact that 79 case studies occurred in developed countries while only 36 occurred in developing countries was unexpected. Nevertheless, it needs to be stressed here that these numbers only represent the numbers of SIs analyzed in academic case studies and do not reflect the numbers of SIs actually happening. Since researchers often conduct case studies occurring in their surroundings, a possible

explanation for the higher number of case studies occurring in developed countries could be that there are more researchers in developed countries than there are researchers in developing countries. A further possible explanation could be that SI case studies in developing countries are published in languages other than English, German or Italian.

It might seem confusing at first that on average 2.1 SDGs were assigned to every case study (2.8 in developing and 1.7 in developed), having just claimed that the SDGs are a suitable categorization system. However, having each case study assigned to approximately two SDGs does not mean that the SDGs are too flexible or overlapping. Instead, this result can be explained by the interactions between the SDGs, which for example have recently been extensively researched by the International Council for Science (ICSU). The ICSU evaluated the interactions of the SDGs on a scale ranging from +3 (indivisible) to −3 (cancelling), and hence also considered negative interactions between the SDGs [65]. An example of a negative interaction would be the decreased availability of water (SDG 6) due to an increase in food production to end hunger (SDG 2) [66]. Since our analysis focused exclusively on the interactions explicitly mentioned in the case studies, it is not unexpected that all our interactions were positive. One example in our analysis, which serves well to demonstrate the interactions, are the BRAC boat, schools in Bangladesh dealing with quality education (SDG 4), gender equality (SDG 5), and reduced inequalities (SDG 10) [67]. An interaction analysis considering negative interactions as well would require more case-specific research and would therefore favor other research methods rather than content analysis.

The high score of the SDG partnerships for the goals (most frequent SDG in developed countries and second-most frequent SDG on average) in our analysis can be explained by the fact that it is a special SDG, considering the means of implementation for realizing the other SDGs [66]. Concerning the occurrence of the other SDGs, many results were as expected. These included, for instance, the high occurrence of the SDG ‘sustainable cities and communities’ in developed countries (rather a luxury problem), SDG ‘no poverty’, which occurred mainly in developing countries (typical and well-known problem in developing countries) or the SDG ‘clean water and sanitation’, which we identified mostly in developing countries (e.g., well-known issue for many developing countries in Africa). Some results, however, were completely unexpected, such as SDG ‘zero hunger’, which occurred more often in developed than in developing countries. A possible explanation might be that when we think of developed countries, we usually think of the wealthiest developed countries and ignore poorer nations that are still classified as developed countries. For example, one case study covered in this research considers shared spaces of community food growing to reduce food poverty in a poor Hungarian city [65]. Furthermore, we also need to remember that even in the richest and most developed countries, by far not everyone has access to sufficient food. Therefore, another case study is about food banks in the USA [68]. One further surprising result was that the SDG ‘responsible production and consumption’ occurred equally in developed and developing countries. People tend to think that the better developed the country is, the more responsible the production and consumption is. However, as our analysis shows, in developing countries responsible production and consumption is also important. An example in our analysis deals with sustainable agro-ecosystems for rice cultivation in India as a counterpart to the green revolution-based technologies [69]. The fact that the SDG ‘affordable and clean energy’ was exclusively addressed in SI case studies in developed countries can be explained by the recent high societal and political interest in clean and sustainable energy [70,71].

## 5. Conclusions, Limitations, and Future Lines of Research

### 5.1. Conclusions

Using multiple methodologies appeared to be suitable and led to results, which we would have been unable to achieve using a single methodology. Based on a systematic literature review, the bibliometric part of this study does not only support the growing academic interest in SI discovered in previous studies, but it also shows a literal boom of published articles in the field of SI within



the last two to three years. The very wide-ranging field of SI from an academic as well as from a practice-oriented perspective often makes the concept of SI appear confusing. Additionally, the vast number of different definitions does not enhance clarity.

Even though there are undoubtedly occasions when inclusive and wide comprehensive definitions work, for academics a clear and rigorous definition is necessary. Using a content analysis, our study shows that five aspects—(1) social need, (2) innovative element, (3) implementation and execution, (4) improvement, (5) relationships and collaborations—should be included in any SI definition.

Using the SDGs as a classification system for the addressed social and environmental problems appeared to be very suitable. The suitability of the SDGs as SI classification system is not only due to fact that we were able to assign 89% of the case studies to one or several SDGs, but also thanks to their worldwide prominence. Assigning the corresponding SDGs to all case studies in the field of SI, similar to the JEL classification system by the American Economic Association, would definitely add value for the SI research community. Furthermore, social innovators could gain ideas and solutions from the classified case studies for their identified problems and needs. What is more, supporting institutions and funding agencies could more easily search for suitable examples when creating a public call or evaluating and comparing submitted applications. Assigning the corresponding SDGs would only require minimal effort by the authors, but it would simplify the handling of the constantly increasing number of publications in the field.

The content analysis provides an approximate guide to which social and environmental problems are mostly being addressed by SIs in developed countries and which social and environmental problems are mostly being addressed by SIs in developing countries. Furthermore, the content analysis indicates which actors are primarily involved in developing and implementing the SIs in both types of countries. Due to the limitations described below, the results can only be interpreted as tendencies. Nevertheless, the results clearly show that all five innovator groups develop and implement SIs. Thus, SIs are certainly not exclusively related to social entrepreneurs.

## 5.2. Limitations

This study also presents some limitations, for which reason its results should be considered as tendencies. Firstly, the country in which the research occurs tends to be biased to the nationality or the institutional affiliation of the researcher and only a fraction of all existing SIs are analyzed by researchers and published in scientific outlets. Secondly, the sources of analyzed articles were limited to the WoS and EBSCO databases. Even though both databases contain a large number of articles, there are unquestionably many other articles not contained in either one of them. Thirdly, articles not written in English, German, or Italian were excluded and using English search terms biased the search results. Especially in developing countries where English is not yet very common, many articles are published in the respective local language. Based on our experience to date, we expect considerable volumes of literature in Spanish, Portuguese, Russian, and Chinese in the future. Fourthly, the definition analysis was based on the common aspects identified in the foregoing analysis of a sub-sample. Fifthly, it needs to be stressed again that we exclusively assigned the SDGs according to the explicitly mentioned and straightforward social and environmental problems. Indirect effects and possible interactions, which remained unmentioned, were not considered, since it would require a different research method to go much deeper into each case (case study method). Lastly, the description of a social or environmental problem is strongly influenced by the objectivity of the contributing authors and the country in which the case occurred.

## 5.3. Future Lines of Research

Due to the limitations of this research, an international research team should conduct a similar and more extensive future study, analyzing a greater number of articles and including a wider spectrum of languages. We are aware that the concept of SI is implicitly related to other fields, particularly SIs are linked to sustainability [72,73] and green innovation [74,75]. Future studies should analyze

SI under this specific lens. A modified version of this study could also analyze what types of social problems are addressed in non-published SIs. Obviously, a study focusing on these SIs would need to be limited to certain countries. To identify non-published SIs, idea competitions, incubators and business-accelerators as well as (social) business award ceremonies could provide a good starting point. Another future research stream could focus on the indirect effects and interactions of the SDGs. It would be interesting to find out how the indirect effects and interactions differentiate between developed and developing countries. Possible indirect effects should be strictly considered and analyzed under the perspective of sustainability. Here, a good point of departure could be the research by Piccarozzi (2017), who analyzed whether socially innovative start-ups contribute to sustainability [76]. In a similar approach, the relationships between the innovators and possible differences depending on the country could also be analyzed. Obviously, this research would need to be conducted on a smaller scale and multiple case studies appear to be an appropriate method.

In conclusion, we would like to stress that independently of whether SI is considered as a messy and blurry field from an academic perspective or not, in a world in which social and environmental problems confront us on a daily basis, SIs are indispensable. It is telling that we identified as many as 136 SI case studies in only two databases. The recent rapidly swelling interest in SI gives us hope that some of the most challenging societal and environmental problems will be solved or at least mitigated in the future.

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