

Key Social Entrepreneurship Ecosystems and the Environmental Problems They Are Solving: A Literature Review

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Abstract: Social entrepreneurship is essential for achieving the Sustainable Development Goals (SDGs) by 2030 and solving many environmental and social problems in the community. Social entrepreneurs and their social enterprises are key figures in social entrepreneurship. They interact with different social players to form various types of social entrepreneurship ecosystems and thus address society's social problems on a larger scale. However, there are limited studies on key social entrepreneurship ecosystems and their role in overcoming the ecological problems of the community. Hence, the paper aims to analyze 36 critical peer-reviewed articles that focus on various social entrepreneurship ecosystems and the vital environmental problems they solved. The 36 articles have been studied from some critical aspects of social entrepreneurship ecosystems, including i) patterns and groups of social entrepreneurship ecosystems, ii) factors for the successful development of social entrepreneurship ecosystems, and iii) ecological problems solved by them. The present study's findings can support future research in the growing research area of social entrepreneurship ecosystems.

1 INTRODUCTION

Social entrepreneurship is vital for solving many wicked societal problems, such as poverty, unemployment, waste, water shortages, environmental pollution, and climate change (Bozhikin et al., 2019). Wicked problems are social or cultural problems that are hard to be solved for various reasons (Rittel and Webber, 1973). The two leading social actors in social entrepreneurship are social entrepreneurs and social enterprises. They interact with different social players to form various types of social entrepreneurship ecosystems and thus address society's social and environmental problems on a larger scale (Bozhikin et al., 2019). The scientific literature on social entrepreneurship ecosystems has grown significantly over the last decade. Various social entrepreneurship ecosystems, like supportive social entrepreneurship ecosystems (Islam, 2020) and strengthening ecosystem/entrepreneurial ecosystems (Spigel and Harrison, 2017), have been studied in the literature. Other papers focus on country-specific social entrepreneurship ecosystems in Mexico (Villegas-Mateos and Vázquez-Maguirre, 2020),

India (Jain, Dhir and Khoa, 2020), Portugal (Thomaz and Catalão-Lopes, 2019). However, to the best of the author's knowledge, missing studies that focus on current SE ecosystems, the factors for their sustainable development, the main social players in each of them, and the key environmental problems overcome via them. Hence, this paper seeks to fulfill this research gap partly.

In the present study, I analyzed in depth 36 critical peer-review articles that studied various social entrepreneurship ecosystems and the vital environmental and social problems they solved. These articles have been analyzed from some aspects of social entrepreneurship ecosystems like i) patterns and groups of social entrepreneurship ecosystems and the most critical players in them, ii) factors for successful development of social entrepreneurship ecosystems, and iii) ecological problems solved by them. The peer-review documents have been searched in the Scopus database, one of the world's most widely used research databases, containing a wide range of peer-reviewed articles published in medical, scientific, and social sciences journals, including humanities. The Scopus database was

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chosen for this study as “it is one of the largest abstract and citation databases of publications (with over 1.7 billion cited references), covering nearly 41,462 titles from approximately 11,678 publishers. It covers over 76 million records with 3 million new items added every year” (Toloo, Khodabandelou and Oukil, 2020, p. 4). The method of how I found the selected 36 peer-review articles in the Scopus database is presented below.

2 METHOD

2.1 Procedure and Scale

I went through several steps or phases to reach the final set of 36 articles (appendix, fig. 1). First, the keywords based on which to search for articles related to social entrepreneurship ecosystems have been determined. The following keywords have been chosen: social entrepreneurship, ecosystems, and environmental problems. They are grouped into the following two main combinations: 1) "social entrepreneurship and ecosystems", and 2) "social entrepreneurship" and "environmental problems". The first combination of words guarantees to find critical articles in the scientific literature related to social entrepreneurship ecosystems and how these ecosystems contribute to solving wicked problems. The second combination aims to identify articles that focus on environmental issues addressed by social entrepreneurship and social entrepreneurship ecosystems. The two combinations mentioned above are searched in the Scopus database. The scientific articles on the set topic were explored in the specified database from 1997 to 30th March 2022. This time period has been selected because social entrepreneurship has gained widespread usage after 1990, particularly in the past ten years (especially for social entrepreneurship ecosystems) (Saebi, Foss, and Linder, 2019).

2.2 Inclusion Criteria

The first combination of keywords ("social entrepreneurship and ecosystems") was searched in the Scopus database from 1997 to 30th March 2022. The study included only peer-reviewed scientific articles published in English and related partly or wholly to social entrepreneurship ecosystems. The second combination of keywords ("social entrepreneurship" and "environmental problems") have also been searched in the Scopus database in the period from 1997 to 30th March 2022. The study

included only peer-reviewed articles published in English in scientific journals or conference proceedings that discussed environmental problems addressed by social entrepreneurship and social entrepreneurship ecosystems.

2.3 Exclusion Criteria

The first combination of keywords contributes to finding various documents, e.g., articles, book chapters, conference papers, books, reviews, conference reviews, editorial, erratum, and notes. Hence, I have first excluded documents written in a language other than English. Then, I focused only on peer-reviewed articles and excluded the rest of the above-mentioned documents. The second combination of keywords ("social entrepreneurship" and "environmental problems") also contributes to finding some documents, e.g., articles, conference papers, books, etc. Due to the insufficient number of documents about environmental problems solved by social entrepreneurship ecosystems, I have selected articles written in English and published in peer-reviewed journals or conference proceedings. The rest of the documents have been ignored because they have been unrelated to the research field.

2.4 A Final List of Articles

When introducing the first combination of keywords ("social AND entrepreneurship AND ecosystems") in the search engine of the Scopus database, 410 articles were found. The abstracts of each of these articles were read. Many articles' abstracts mentioned only one of the chosen three keywords. Other articles' abstracts pointed out social entrepreneurship but did not focus on social entrepreneurship ecosystems. A few articles mentioned simultaneously in the abstract the three keywords and focused on particular social entrepreneurship ecosystems. Hence, only the articles that partly or wholly studied social entrepreneurship ecosystems were recognized and selected. Of the 410 papers, 28 were identified as suitable for the study area based on the above criteria/factors. In the introduction of the second combination of keywords ("social entrepreneurship" AND "environmental problems") in the search engine of the Scopus database, 29 documents were found. The abstracts of each of these documents were read. After that, only documents focused partly or wholly on the environmental problems solved by social entrepreneurship and social entrepreneurship ecosystems were chosen. Of the 29 documents, 8 articles were identified as suitable for the study area.

As a result of both search combinations, the final list of documents comprised 36 articles (appendix, table 1).

3 RESULTS, CONCLUSIONS, AND LIMITATIONS

The final list of 36 articles has been analyzed from four main perspectives.

First, I have identified 21 key social entrepreneurship ecosystems mentioned in them. Some of the discovered social entrepreneurship ecosystems are related to particular sectors of the economy (e.g., water sector (Biggs, Westley and Carpenter, 2010), energy sector (Goyal, Sergi and Kapoor, 2017), waste sectors (Mihaliková and Lachytová, 2020)), while others are in the field of innovation and new technologies. Several social entrepreneurship ecosystems are created in educational sectors to support the creation of new social enterprises. The rest of the social entrepreneurship ecosystems focus on particular counties or aim to increase the social impact of social enterprises and their ecosystems. What is more, the discovered social entrepreneurship ecosystems are classified into five patterns.

Second, the factors for successfully developing identified social entrepreneurship ecosystems and their key actors have been presented. In almost all social entrepreneurship ecosystems, social entrepreneurs and enterprises play a crucial role.

Third, I have discussed the role of government in supporting social entrepreneurship ecosystems. There are a bunch of regulatory mechanisms (e.g., subsidies and grants, legislation, laws and decrees, in-kind resources, taxes, public-private partnerships, public, and voluntary programs, vouchers, websites, and media campaigns) that the governments can use to support the various social entrepreneurship ecosystems (Bozhikin et al., 2019). One of the key macroeconomic factors that can facilitate the creation of new social entrepreneurship ecosystems (Kim, 2020, Starshinova and Chikova, 2021) and develop the existing ones are public administration and authorities. Furthermore, the government can support the key players in each ecosystem via tax reduction, subsidies, and various administrative relief (Bozhikin et al., 2019).

Forth, ecological problems solved by identified social entrepreneurship ecosystems have been described. Social entrepreneurship ecosystems are seen as an appropriate tool to address several

environmental issues, namely: i) water and water shortages (Chandra, Man Lee and Tjiptono, 2021), ii) ecosystem breakdown and environmental pollution (Fhiri et al., 2021), iii) waste management and harmful waste secretions (Mihaliková and Lachytová, 2020); iv) climate change (Groma and Licite-Kurbe, 2021). For example, social enterprises and social entrepreneurship ecosystems can overcome some of the water problems of society by 1) supplying clean drinking water to people in remote regions of a country, 2) providing water treatment technologies in people's homes, and thus improving water quality. (Chandra, Man Lee and Tjiptono, 2021, Duncan-Horner, Farrelly and Rogers, 2022, Groma and Licite-Kurbe, 2021, Letaifa, 2016). Social entrepreneurship ecosystems can also solve particular waste and ecological problems of the community (Licite, Perkune and Auzina, 2020; Mihaliková and Lachytová, 2020; Fhiri et al., 2021) through 1) involvement in several activities such as sorting and recycling of clothing and other materials; 2) creating a waste-free café, 3) involvement in municipal waste separation (Mihaliková and Lachytová, 2020); 4) providing and improving waste management services (Mihaliková and Lachytová, 2020). In conclusion, the present study's findings can support future research in the growing research area of social entrepreneurship ecosystems.

There are some limitations of the study. First, the research focus only on articles published in the Scopus database from 1990 to 30th March 2022. The remaining documents, like books, editorial, erratum, notes, etc., are not considered in the current study. Second, other databases like Web of Science, CrossRef, Google Scholar, and Research Gate are not used. Hence, the current dataset can be extended with a few additional articles if the same research criteria are applied to other databases like Web of Science, CrossRef, Google Scholar, and Research Gate (Toloo, Khodabandelou and Oukil, 2020). The second possible option to extend the dataset is to search documents (e.g., articles, books, conference papers, editorial, erratum, and notes) in the database mentioned above from 1997 to 30th August 2022.

DATA AVAILABILITY

Underlying data

Figshare: [Social entrepreneurship ecosystems].

<https://doi.org/10.6084/m9.figshare.20214590.v1>

The project contains the following underlying data:

- [SE and ecosystems] (Dataset).

Extended data

Figshare: [Social entrepreneurship ecosystems].
<https://doi.org/10.6084/m9.figshare.20216723>

This project contains the following extended data:

- Supplementary Table 1.

Data are available under the terms of the Creative Commons Zero "No rights reserved" data waiver (CC0 1.0 Public domain dedication).

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COMPETING INTERESTS

No competing interests were disclosed.

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REFERENCES

- Baskaran, A., Tang, M., Thiruchelvam, K., Shahabudin, S. M., & Chan, T. S. Y. (2019). Social Entrepreneurship and Inclusive Growth: Attributes, Perceptions and Roles of Business Incubators and Intermediaries in Malaysia. *Science, Technology and Society*, 24(3), 486–506. <https://doi.org/10.1177/0971721819873186>
- Barkov, A.V., Grishina, Y.S., Kazachenok, S.S. (2020). Competitiveness of Social-and-Ecological Entrepreneurship in Regional Markets: Prospects for the Legalization of a Mission-Driven Corporate-Legal Model. In: Inshakova, A., Inshakova, E. (eds) *Competitive Russia: Foresight Model of Economic and Legal Development in the Digital Age*. CRFMELD 2019. Lecture Notes in Networks and Systems, vol 110. Springer, Cham. https://doi.org/10.1007/978-3-030-45913-0_39
- Biggs, R., Westley, F. R., & Carpenter, S. R. (2010). Navigating the back loop: Fostering social innovation and transformation in ecosystem management. *Ecology and Society*, 15(2), 28. <https://doi.org/10.5751/ES-03411-150209>
- Bozhikin, I. Macke, J., da Costa, L. F., (2019). The role of government and key non-state actors in social entrepreneurship: A systematic literature review. *Journal of Cleaner Production*, 226, 730-747. <https://doi.org/10.1016/j.jclepro.2020.124499>
- Bozhikin, I. (2022). SE and ecosystems.xlsx. figshare. Dataset. <https://doi.org/10.6084/m9.figshare.20214590.v1>
- Bozhikin, I. (2022). Supplementary Table 1. figshare. Dataset. <https://doi.org/10.6084/m9.figshare.20216723.v36/j.jclpro.2019.04.076>
- Carayannis, E. G., Grigoroudis, E., Stamati, D. and Valvi, T., (2021). Social Business Model Innovation: A Quadruple/Quintuple Helix-Based Social Innovation Ecosystem," in *IEEE Transactions on Engineering Management*, 68, 1, 235-248, doi: 10.1109/TEM.2019.2914408.
- Chandra, Y., Man Lee, E. K., & Tjiptono, F. (2021). Public versus private interest in social entrepreneurship: Can one serve two masters? *Journal of Cleaner Production*, 280, 124499. <https://doi.org/10.1016/j.jclepro.2020.124499>
- Cheah, S., & Ho, Y. P. (2019). Building the Ecosystem for Social Entrepreneurship: University Social Enterprise Cases in Singapore. *Science, Technology and Society*, 24(3), 507–526. <https://doi.org/10.1177/0971721819873190>
- de Bruin, A., Shaw, E., & Lewis, K. V. (2017). The collaborative dynamic in social entrepreneurship. *Entrepreneurship and Regional Development*, 29(7–8), 575–585. <https://doi.org/10.1080/08985626.2017.1328902>
- Del Giudice, M., Garcia-Perez, A., Scuotto, V., & Orlando, B. (2019). Are social enterprises technological innovative? A quantitative analysis on social entrepreneurs in emerging countries. *Technological Forecasting and Social Change*, 148(August), 119704. <https://doi.org/10.1016/j.techfore.2019.07.010>
- Duncan-Horner, E. M., Farrelly, M. A., & Rogers, B. C. (2022). Understanding the social entrepreneur: a new intentions model for advancing equity, social justice and sustainability. In *Journal of Entrepreneurship in Emerging Economies* (Vol. 14, Issue 3). <https://doi.org/10.1108/JEEE-10-2020-0359>
- Fhiri, N. S. D., Abdullah, S., Ahmad, Y., Hussin, N. S., Jamaluddin, J., & Ramli, A. J. (2021). Social entrepreneurship: Environmental sustainability. *AIP Conference Proceedings*, 2339(May). <https://doi.org/10.1063/5.0044698>
- Gerli, F., Chiodo, V., & Bengo, I. (2021). Technology transfer for social entrepreneurship: Designing problem-oriented innovation ecosystems. *Sustainability (Switzerland)*, 13(1), 1–19. <https://doi.org/10.3390/su13010020>
- Goyal, S., Sergi, B. S., & Jaiswal, M. P. (2016). Understanding the challenges and strategic actions of social entrepreneurship at base of the pyramid. *Management Decision*, 54(2), 418–440. <https://doi.org/10.1108/MD-11-2014-0662>
- Goyal, S., Sergi, B. S., & Kapoor, A. (2017). Emerging role of for-profit social enterprises at the base of the pyramid: the case of Selco. *Journal of Management*

- Development, 36(1), 97–108. <https://doi.org/10.1108/JMD-05-2015-0070>
- Groma, L., & Licite-Kurbe, L. (2021). Theoretical aspects of social entrepreneurship in the context of environmentalism. *Research for Rural Development*, 36, 233–238. <https://doi.org/10.22616/rrd.27.2021.033>
- Guerrero, M., Santamaria-Velasco, C. A., & Mahto, R. (2021). Intermediaries and social entrepreneurship identity: implications for business model innovation. *International Journal of Entrepreneurial Behaviour and Research*, 27(2), 520–546. <https://doi.org/10.1108/IJEBR-10-2020-0679>
- Hervieux, C., & Voltan, A. (2018). Framing Social Problems in Social Entrepreneurship. *Journal of Business Ethics*, 151(2), 279–293. <https://doi.org/10.1007/s10551-016-3252-1>
- Ho, J. Y., & Yoon, S. (2022). Ambiguous roles of intermediaries in social entrepreneurship: The case of social innovation system in South Korea. *Technological Forecasting and Social Change*, 175(December 2020), 121324. <https://doi.org/10.1016/j.techfore.2021.121324>
- Islam, S. M. (2020). Unintended consequences of scaling social impact through ecosystem growth strategy in social enterprise and social entrepreneurship. *Journal of Business Venturing Insights*, 13(January), e00159. <https://doi.org/10.1016/j.jbvi.2020.e00159>
- Jain, M., Dhir, S., Khoa, T., (2020). TISM modelling of social enterprise ecosystem : a study in Indian context. *Journal for Global Business Advancement* 13(5), pp.665 - 681. 10.1504/JGBA.2020.112820
- Kabbaj, M., El Ouazzani Ech Hadi, K., Elamrani, J., & Lemtaoui, M. (2016). A study of the social entrepreneurship ecosystem: The case of Morocco. *Journal of Developmental Entrepreneurship*, 21(4). <https://doi.org/>
- Kim, M. G., Lee, J. H., Roh, T., & Son, H. (2020). Social entrepreneurship education as an innovation hub for building an entrepreneurial ecosystem: The case of the kaist social entrepreneurship mba program. *Sustainability (Switzerland)*, 12(22), 1–23. <https://doi.org/10.3390/su12229736>
- Letaifa, S. B., (2016). How social entrepreneurship emerges, develops and internationalises during political and economic transitions. *European Journal of International Management*, 10(4), 455–466. <https://doi.org/10.1504/EJIM.2016.077424>
- Licite, L., Perkune, L., Auzina, A., (2020). ROLE OF SOCIAL ENTREPRENEURSHIP IN TACKLING ENVIRONMENTAL PROBLEMS. *International Multidisciplinary Scientific GeoConference-SGEM*. 431-438, DOI: 10.5593/sgem2020/5.2/s21.053
- Mihaliková, E., & Lachytová, L. (2020). Analysis of municipal waste separation in Slovakia and possible alternatives. *TEM Journal*, 9(3), 1108–1115. <https://doi.org/10.18421/TEM93-36>
- Mirvis, P., & Googins, B. (2018). Catalyzing Social Entrepreneurship in Africa: Roles for Western Universities, NGOs and Corporations. *Africa Journal of Management*, 4(1), 57–83. <https://doi.org/10.1080/23322373.2018.1428020>
- Othman, N., & Ab Wahid, H. (2014). Social entrepreneurship among participants in the students in free enterprise program. *Education and Training*, 56, 852–869. <https://doi.org/10.1108/ET-09-2013-0111>
- Paina, N. D. R. (2018). Challenges for the development of social entrepreneurship in Romania. *Online Journal Modelling the New Europe*, 27, 160–182. <https://doi.org/10.24193/OJMNE.2018.27.08>
- Pathak, S., & Mukherjee, S. (2020). Entrepreneurial ecosystem and social entrepreneurship: case studies of community-based craft from Kutch, India. *Journal of Enterprising Communities*, 15(3), 350–374. <https://doi.org/10.1108/JEC-06-2020-0112>
- Rahdari, A., Sepasi, S., & Moradi, M. (2016). Achieving sustainability through Schumpeterian social entrepreneurship: The role of social enterprises. *Journal of Cleaner Production*, 137, 347–360. <https://doi.org/10.1016/j>
- Rittel, H. W., & Webber, M. M. (1973). "Dilemmas in a General Theory of Planning." *Policy sciences*, 4(2), 155-169. <https://doi.org/10.1016/j.jclepro.2016.06.159>
- Roundy, P. T. (2017). Social entrepreneurship and entrepreneurial ecosystems Complementary or disjoint phenomena? *International Journal of Social Economics*, 44(9), 1252–1267. <https://doi.org/10.1108/IJSE-02-2016-0045>
- Roundy, P. T., & Lyons, T. S. (2022). Humility in social entrepreneurs and its implications for social impact entrepreneurial ecosystems. *Journal of Business Venturing Insights*, 17(September 2021), e00296. <https://doi.org/10.1016/j.jbvi.2021.e00296>
- Saebi, T., Foss, N., Linder, S., (2019). Social Entrepreneurship Research: Past Achievements and Future Promises. *Journal of Management Volume: 45 issue: 1, page(s): 70-95*. <https://doi.org/10.1177/0149206318793196>
- Siqueira, A. C. O., Mariano, S. R. H., & Moraes, J. (2014). Supporting Innovation Ecosystems with Microfinance: Evidence from Brazil and Implications for Social Entrepreneurship. *Journal of Social Entrepreneurship*, 5(3), 318–338. <https://doi.org/10.1080/19420676.2014.927388>
- Spigel, B., & Harrison, R. (2017). Toward a process theory of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, 12(1), 151–168. <https://doi.org/10.1002/sej.1268>
- Starshinova, A., & Chikova, E. (2021). Acceleration Programs in the Ecosystem of Social Entrepreneurship Support. *Economic and Social Changes: Facts, Trends, Forecast / Экономические и Социальные Перемены: Факты, Тенденции, Прогноз*, 14(4 (76)), 216–230. <https://doi.org/10.15838/esc.2021.4.76.13>
- Surie, G. (2017). Creating the innovation ecosystem for renewable energy via social entrepreneurship: Insights from India. *Technological Forecasting and Social Change*, 121, 184–195. <https://doi.org/10.1016/j.techfore.2017.03.006>

Thomaz, I. F., & Catalão-Lopes, M. (2019). Improving the Mentoring Process for Social Entrepreneurship in Portugal: A Qualitative Study. *Journal of Social Entrepreneurship*, 10(3), 367–379. <https://doi.org/10.1080/19420676.2018.1561497>

Thompson, T. A., Purdy, J. M., & Ventresca, M. J. (2018). How entrepreneurial ecosystems take form: Evidence from social impact initiatives in Seattle. *Strategic Entrepreneurship Journal*, 12(1), 96–116. <https://doi.org/10.1002/sej.1285>

Thomsen, B., Muurlink, O., & Best, T. (2018). The political ecology of university-based social entrepreneurship ecosystems. *Journal of Enterprising Communities*, 12(2), 199–219. <https://doi.org/10.1108/JEC-08-2017-0068>

Villegas-Mateos, A., & Vázquez-Maguirre, M. (2020). Social entrepreneurial ecosystems: A regional perspective of Mexico. *International Journal of Entrepreneurship*, 24(1), 1–19.

Zebryte, I., & Jorquera, H. (2017). Chilean tourism sector "B Corporations": evidence of social entrepreneurship and innovation. *International Journal of Entrepreneurial Behaviour and Research*, 23(6), 866–879. <https://doi.org/10.1108/IJEER-07-2017-0218>

APPENDIX

Figure 1 and table 1 are presented below. Figure 1 provides information about the selection process of papers, and table 1 contains the final list of 36 selected articles.

Stage	Criteria and actions taken	
	Social entrepreneurship and ecosystems	Social entrepreneurship and environmental problems
Criteria	<ul style="list-style-type: none"> Only papers in English published in peer-review journals Keyword "ecosystems" combined with keywords "social" and "entrepreneurship" The search terms were applied in the following fields: title, abstract or keywords. 	<ul style="list-style-type: none"> Only papers in English published in peer-review journals or conference proceedings Keyword "environmental problems" combined with keyword "social entrepreneurship" The search terms were applied in the following fields: title, abstract or keywords.
Identification	Records were identified through Scopus database researching (n=410 articles).	Records were identified through Scopus database researching (n=29 documents).
Selection	The selection of 28 articles published in peer-review journals focuses on social entrepreneurship ecosystems (n = 28)	The selection of 8 articles published in peer-reviewed journals or conference proceedings discusses environmental problems addressed by social entrepreneurship and SE ecosystems. (n = 8)
A final list of articles	36 critical peer-review articles (n=36)	

Source: Drawn by the author

Figure 1: Summarization of the selection process.

Table 1: A final list of 36 articles.

Social entrepreneurship and Ecosystems		
#	Articles	Journal
1	Spigel and Harrison, 2017	Strategic Entrepreneurship Journal
2	Thompson, Purdy and Ventresca, 2018	Strategic Entrepreneurship Journal
3	Biggs, Westley and Carpenter, 2010	Ecology and Society
4	Raddari, Sepasi and Moradi, 2016	Journal of Cleaner Production
5	Surie, 2017	Technological Forecasting and Social Change
6	Rounby, 2017	International Journal of Social Economics
7	Goyal, Sergi and Jaiswal, 2016	Management Decision
8	de Bruin, Shaw and Lewis, 2017	Entrepreneurship and Regional Development
9	Goyal, Sergi and Kapoor, 2017	Journal of Management Development
10	Del Giudice et al., 2019	Technological Forecasting and Social Change
11	Ho and Yoon, 2022	Technological Forecasting and Social Change
12	Herveux and Voltan, 2018	Journal of Business Ethics
13	Islam, 2020	Journal of Business Venturing Insights
14	Rounby and Lyons, 2022	Journal of Business Venturing Insights
15	Caryannis et al., 2021	IEEE Transactions on Engineering Management
16	Thomsen, Muurlink and Best, 2018	Journal of Enterprising Communities
17	Pathak and Mukherjee, 2020	Journal of Enterprising Communities
18	Kabbaj et al., 2016	Journal of Developmental Entrepreneurship
19	Mirvis and Grogins, 2018	Africa Journal of Management
20	Siqueira, Mariano and Moraes, 2014	Journal of Social Entrepreneurship
21	Thomaz and Catalão-Lopes, 2019	Journal of Social Entrepreneurship
22	Villegas-Mateos and Vázquez-Maguirre, 2020	International Journal of Entrepreneurship
23	Guerreiro, Santamaría-Velasco and Mahto, 2021	International Journal of Entrepreneurial Behaviour and Research
24	Gerli, Chiodo and Bengo, 2021	Sustainability
25	Cheah and Ho, 2019	Science, Technology and Society
26	Baskaran et al., 2019	Science, Technology and Society
27	Jain, Dhir and Khoo, 2020	Journal for Global Business Advancement
28	Paina, 2018	Journal Modelling the New Europe
Social entrepreneurship and Environmental problems		
#	Articles	Journal or conference proceeding
1	Othman and Ab Wahid, 2014	Education and Training
2	Zebryte and Jorquera, 2017	International Journal of Entrepreneurial Behaviour and Research
3	Chandra, Man Lee and Tijjono, 2021	Journal of Cleaner Production
4	Fliri et al., 2021	AIP
5	Licite, Perkane and Auzina, 2020	International Multidisciplinary Scientific GeoConference
6	Barikov, Grishina and Kazachenok, 2020	Lecture Notes in Networks and Systems
7	Mihaliková and Lachyová, 2020	TEM Journal
8	Groma and Licite-Kurbe, 2021	Research for Rural Development

Source: Drawn by the author