

TRIPLE BOTTOM LINE, SUSTAINABILITY AND ECONOMIC DEVELOPMENT

THEORETICAL INSIGHTS AND THE RESEARCH AGENDA

Keywords:

Triple Bottom, Line, Economic, Development;
Sustainability

Abstract:

An analysis of the relationship between Triple Bottom Line (TBL), economic development (ED) and sustainability was undertaken to strengthen the extension of TBL's dominant rhetoric to sustainability-aligned ED and pave the way for new lines of research. We used the Web of Science database and gathered for analysis 37 publications, which simultaneously respected the key search terms: Triple Bottom Line, Economic Development and Sustainability, to carry out a bibliometric analysis of the literature. Four clusters were identified and designated as: social development, social entrepreneurship, economic development and sustainability. This study includes an analysis of the evolution of publications and citations, co-occurrence of keywords, identification of research lines and analysis of bibliographic coupling study. It also combats the scarcity of publications relating TBL, ED and sustainability. A table of research trends, a mapping of publications and the directions that should be followed by the academy are presented. The fact that the bibliometric literature review was based only on the Web of Science, the applied filtering process and the use of software may have omitted the literature. The need to expand TBL beyond the companies' core business to more global concerns and a holistic study of TBL was identified.

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INTRODUCTION

The World Commission on Environment and Development of the United Nations (UN) published in 1987 the report known as the Brundtland report (Holden et al., 2014). In this document SD is described as development that meets the needs of the present without systematised incorporation of inter and intra-generational economic, social and environmental performance (Geissdoerfer et al., 2017). This climate of alertness to the sustainability theme led to the emergence, in 1996, of the TBL construct, or Sustainability Tripod, designed by Elkington (Elkington, 2006). The TBL is an accounting structure (Law, 2015), presented as a conceptual framework where corporate success is granted by balancing the performances of the business, environmental and social dimensions (Elkington, 2006).

TBL has seen increasing favour among managers and academics thanks to its perceived positive impact on competitiveness (He et al., 2019), and its measurement makes companies aware of their moral and social responsibilities (Okorie et al., 2021). Companies must take a broader view than the single profit line to achieve sustainability (Shim et al., 2021). Despite the positive development of TBL, there is a shortage of theoretical and empirical studies that recognise its broad capabilities that affect the ability of simultaneously pursue economic, environmental, and social success (He et al., 2019). In addition to the lack of empirical studies (Cardoni et al., 2020), there is a need for strengthening quantitative analysis methods (Tseng et al., 2020). The need for the existence of studies that encompass the sustainability rhetoric of TBL more broadly was identified by Isil and Hernke (2017). Walker et al. (2020).

Sustainability has gained greater notoriety in business and academia (Sartori et al., 2017). In a literal sense, it means the ability to sustain or maintain at a certain level a state (Kajikawa, 2008). If we pay attention to more systematic thinking, we realise that sustainability cannot be defined by an individual part, but rather by a complete socio-economic-environmental system (Wang and Lin, 2004). Considering that TBL highlights the difference between economic growth and ED (Wilson and Polter, 2020), that the same TBL is increasingly prevalent in disciplines that relate to ED but that it has been given little attention in this field (Hammer and Pivo, 2017). And also, bearing in mind that anthropogenic activities are synonymous with a massive threat to the planet and humanity and have led companies to start with more active efforts towards sustainability (Hammer and Pivo, 2017), we consider it pertinent and relevant to consider ED and sustainability in our study, because despite the emerging body of literature, the relationships between TBL, ED and sustainability remain understudied.

To reduce this gap, we propose a bibliometric literature review that addresses the relationship between three topics: TBL, ED, and sustainability. We have a threefold objective. It presents a description of the evolution of studies that relate TBL, ED, and sustainability; strengthens the expansion of the dominant logic of TBL into the domain of ED in line with sustainability and identifies the emerging lines of research previewing the research paths of the academy. The search that served as a starting point for our analysis was carried out in the Web of Science.

Given the defined objectives, we have two research questions: (1) What evidence of scientific production links TBL, ED, and sustainability? And (2) is TBL an integral part of sustainable ED?

At the intersection of TBL and sustainability themes, we found the systematic literature review of Tseng et al. (2020). At the intersection of sustainability and ED, we found the study of Dasgupta (2010). However, there was no bibliometric review so far that relates TBL with ED and sustainability, which attests to the originality of our analysis.

We present an intellectual framework of this theme and a mapping of the publications that carry great interest for the holistic research of TBL. We also respond to the concerns of those who believe that TBL is the best way to create a foundation for a sustainable future for all and who are eager to see a congruent expansion towards ED by providing a reflection of how academic research has evolved within this theme. Our review reinforces the focus on the interaction between the factors of TBL in ED. The results obtained from the bibliometric analysis is of great use as it not only frames us in the past, the recent past, and the present of TBL and ED research but also elucidates future lines of research.

METHODOLOGY

Librarianship and Information Science have bibliometrics as one of its branches, whose domain is increasingly relevant (Milojevic et al., 2011). Bibliometric methods enable researchers to support their findings on aggregated bibliographic data and encapsulate a high potential for categories that are derived from published reviews to be quantitatively confirmed (Zupic and Čater, 2015). Bibliometric analysis is generally robust to uncertainty in keyword choice (Zhi et al., 2015).

To identify our sample and to delimit the object of study, and in order to respect the holistic nature of TBL, Sustainability, and ED, we conducted a search in the Web of Science Core Collection, by topic (title, abstract, keywords), with the terms: “Triple bottom line”, “Sustainab*” and “Economic development” (figure 1). The choice of this database is due to the fact that it is considered, when bibliometric explorations are conducted, in the field of social sciences, a core source of information (Liu et al., 2015), because its data are subject to a process of selection, organisation and care (Franceschini et al., 2016).

The extraction was performed on 31 December 2021 and considered the years 1900 to 2021 and all types of publications. Thus, we gathered 37 publications, including articles, review articles and proceedings papers, in our sample.

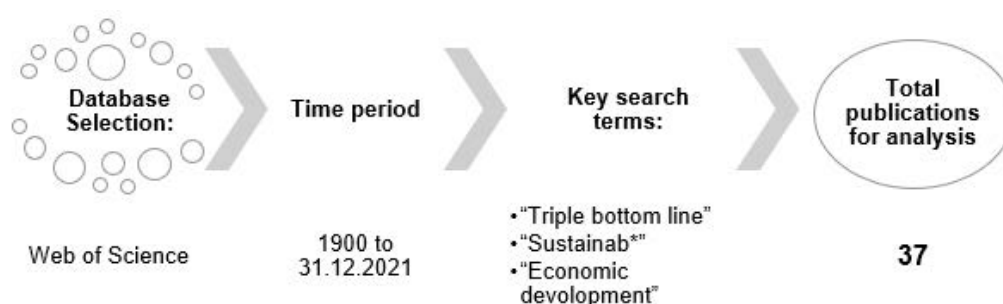


Figure 1
Sample extraction

To conduct our analysis, we used two software programs. VOSviewer, which, being a tool for building and visualising networks (Eck and Waltman, 2017), allows detailed examination of bibliometric maps with easy interpretation (Eck and Waltman, 2010) and NVivo, which adapts to a wide variety of data analysis methods (Zamawe, 2015).

RESULTS AND DISCUSSION

Evolution Of Publications

Understanding the evolution of publications and citations is one of the principles of bibliometric analysis. The 37 publications of the sample have 508 citations, which are representative of an average of 13.73 citations per article (excluding the two self-citations that represent 0.4% of the total).

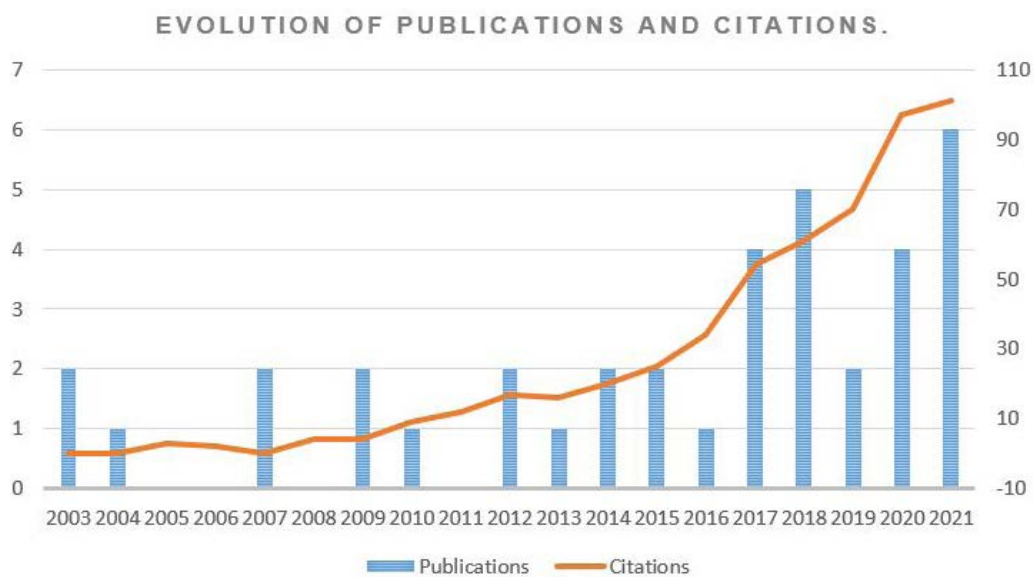


Figure 2

Evolution of publications and citations

In 2003, one of the first publications on the subject under analysis were published by Azapagic's (2003) that proposes a general framework for a Corporate Sustainability Management System that enables the translation of general SD principles into business practices. The other publication was Bissett and Green (2003), who analysed the commercial waste management environment and the existing legislative and policy frameworks that existed at the time. From 2004 to 2016, the number of annual publications did not undergo major oscillations, with 14 publications having been disseminated, representing an average of approximately 1.07 releases per year. In turn, the years 2017 to 2021 represent around 57% of the total number of publications, with 21 works disseminated, despite only 2 publications having been released in 2019. The evolution of the number of citations has been in line with the evolution of the number of publications, showing a slight growth until 2016, the year from which there are more than 54 annual citations. It should be noted that 2021 was the year with the highest number of citations, i.e., 101, which represents 19.1% of the total number of citations.

Using the software VOSviewer version 1.6.17, we present the co-occurrence analysis of the keywords of the 37 publications under study. These have 218 keywords present, and with the application of the criterion of at least two times for occurrence, 26 keywords remained for analysis. This allowed us to identify the annual publication trend through the shades that the program elects for the passing of the years.

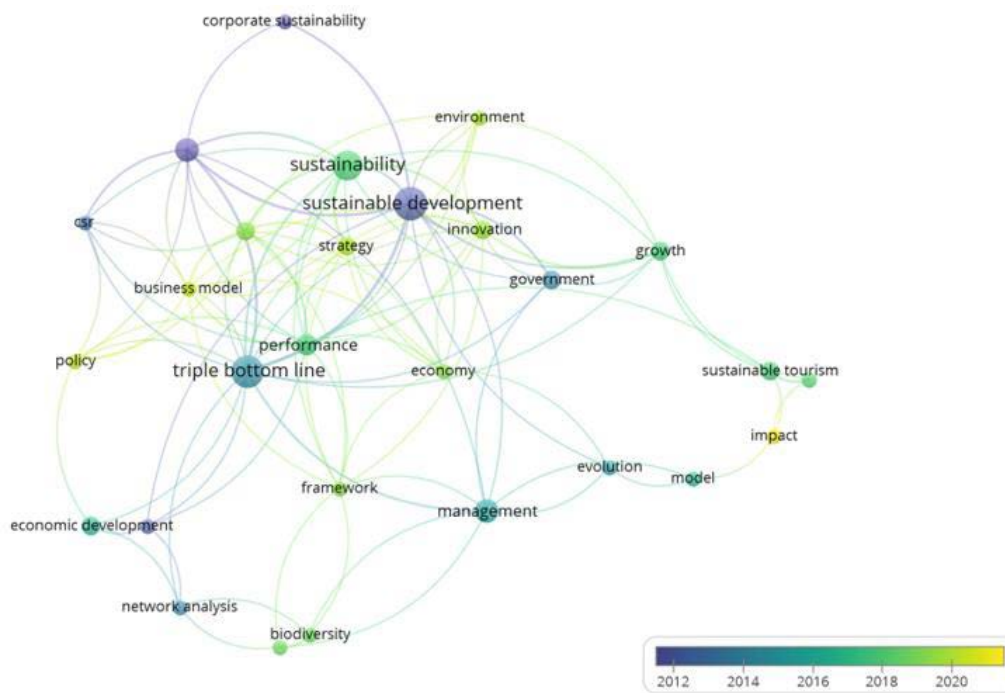


Figure 3
Keyword co-occurrence analysis

In the analysis shown in figure 3, it was verified that until the year 2012, there was no concentration of themes, so the VOSviewer did not present results for this period. In the years 2012 to 2016, the focus of the studies fell on the themes of sustainable development, corporate social responsibility, corporate sustainability, CRS, triple bottom line, management, government, networks, and network analysis. The concentration of themes in the years 2017 to 2020 on sustainability and ED was precedent of lines of research that relate to the spread of TBL principles to a more global look at sustainability. It then becomes important to elect studies that privilege research in a more macro way. In addition, concerns with supply chain management must be taken into account, innovation must guide the paths of research supporting the creation of new strategies, new policies, and new business models that support an ED that cares about the environment and the impacts of its activities.

Most Relevant Publications And Journals

In the analysis of the most relevant publications, we identified the five with the highest number of citations, which are presented in Table I. Note that these publications account for 74.8% of the total citations.

Table I

Publications with the highest number of citations.

Authors / Year	Citation	Publication title	Journal	Impact Factor 2020	5-year impact factor
Azapagic (2003)	151	Systems approach to corporate sustainability - A general management framework	Process Safety and Environmental Protection	6,158	6,046
Goerner et al. (2009)	115	Quantifying economic sustainability: Implications for free-enterprise theory, policy and practice	Ecological Economics	5,389	6,233
Hammer and Pivo (2017)	51	The Triple Bottom Line and Sustainable Economic Development	Economic Development Quarterly	1,696	1,958
Lin et al. (2015)	38	Developing an assessment framework for managing sustainability programs: A Analytic Network Process approach	Expert Systems with Applications	6,954	6,789
Taylor (2017)	25	Issues in measuring success in community-based Indigenous tourism: elites, kin groups, social capital, gender dynamics and income flows	Journal of Sustainable Tourism	7,968	7,857

The publication with the highest impact is the article by Azapagic (2003) which focuses on corporate sustainability and has the highest number of citations, counting 151 citations, or 28.5% of the citations in the sample. This article draws attention to the qualities of corporate sustainability. The article by Goerner et al. (2009) is heavily weighted in terms of citations, with 115 representing 21.7% of the citations in the sample. These authors present a theoretical explanation for what constitutes healthy development and the mathematical means to quantitatively differentiate it from mere growth, starting from the basic idea that the same laws of growth and development apply to both natural and economic flow systems. Another article with a noteworthy impact is that of Hammer and Pivo (2017), with 51 citations, or 9.6% of the citations in the sample. The authors assume that there is a lack of a clear definition of TBL ED and that there is little research conducted on how ED professionals view and practice this concept. In our ranking by impact level, the article by Lin et al. (2015) appears in 4th place with 38 citations which correspond to 7.2% of the citations of the sample. This process helps to capture imprecision in human judgment, while TBL allows the consideration of social development, environmental protection, and ED issues, thus admitting a holistic view of the company when making decisions. Finally, the last of the five publications in our list of most impactful is that of Taylor (2017) which registers 25 citations, corresponding to 4.7% of the citations in the sample. The author reports on her monitoring of an indigenous, community-based tourism. Funding agencies evaluated this project based on a TBL metric.

When we look into which journals publish the most on the theme under study, it becomes clear that the highlight goes to Sustainability with three articles, corresponding to 8.1% of the sample. The Journal of Sustainable Tourism has two publications that correspond to 5.4% of the sample. The remaining publications were made in different journals, including Ecological Economics, Expert Systems with Applications, and the International Entrepreneurship and Management Journal.

If our focus concerns the publishers that show the most interest in the topic we address in our study, Elsevier and Springer Nature stand out the most with five publications, each representing 13, 5% of the sample, followed by Taylor & Francis with 4 publications, or 10.8% of the sample, MDPI and Wiley have 3 publications each, representing 8.1% of the sample and Channel View Publications has 2 publications, 5.4% of the sample.

Cluster analysis

When performing our cluster analysis, we used the software VOSviewer version 1.6.17 to perform bibliographic coupling. The use of this bibliometric method is especially suitable for examining the research front of a topic or research field (Zupic and Čater, 2015). Its mode of operation is vital for analysing relationships and gathering topics of scholarly articles (Liu, 2017).

Of the 37 articles in the sample, 16 were grouped by the program, thus 21 were excluded from our analysis. Figure 4 shows the formation of four clusters collected by the VOSviewer; each cluster corresponds to a different colour.

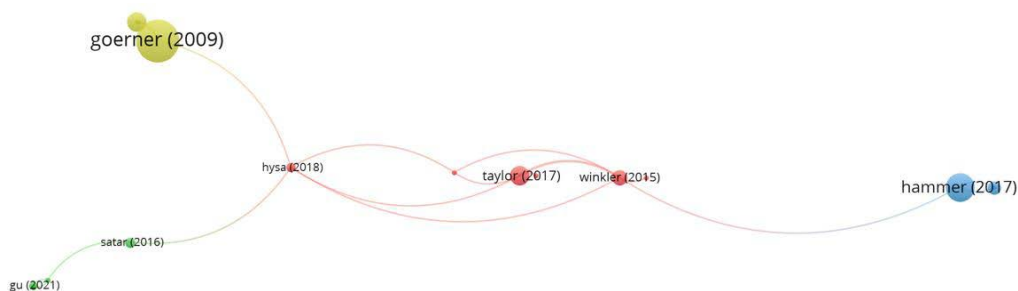


Figure 4
Cluster Analysis.

The focus of our study being TBL, ED, and sustainability, we identified the clusters as follows: cluster 1 - Social Development; cluster 2 - Social Entrepreneurship; cluster 3 - Economic Development; and cluster 4 - Sustainability. This naming and the VOSviewer findings were reinforced by the analysis, which we also conducted, in NVivo software, on the words that are most repeated in each cluster (table II). In the table below, we detail and characterise the constitution of each cluster.

Table II

Identification of clusters and clouds of words most cited in each cluster

	Authors	Investigation
Cluster 1: Social Development		
	Hysa <i>et al.</i> (2018)	Qualitative - Literature review, theory development.
	Sewell <i>et al.</i> (2017)	Qualitative - Conducting dialogic interviews, built from a literature review.
	Sroda-Murawska <i>et al.</i> (2021)	Qualitative - Document analysis, interviews.
	Taylor (2017)	Qualitative - Case study through the monitoring of a tourism project.
	Usmani <i>et al.</i> (2021)	Quantitative - Use of Interpretative Structural Modelling, application of a questionnaire, and use of an Impact Matrix Croisés Multiplication Appliqués to Classement.
	(Winkler <i>et al.</i> , 2015)	Quantitative - Spatial Bayesian model averaging.
Cluster 2: Social Entrepreneurship		
	Atisa <i>et al.</i> (2021)	Qualitative - Case study supported by peer-reviewed literature review.
	Gu <i>et al.</i> (2021)	Quantitative - Explores the Moderation Effect using Panel Co-integration, Fully Modified Least Squares, and Dynamic Least Squares methods.
	Gunawan and Dhewanto (2012)	Qualitative - Open structured surveys.
	Satar and John, (2016)	Mixed - Literature review and conceptual model proposal.
Cluster 3: Economic Development		
	Hammer and Pivo (2017)	Qualitative - Case study identified through literature, web searches, semi-structured interviews with professionals and professional networks.
	Liang <i>et al.</i> (2018)	Mixed - Test of an SME valuation model, fuzzy multi-criteria valuation method combined with a multi-objective decision-making method.
	Saha (2014)	Qualitative - Theory development, reflection on the future of management in light of sustainable economic development.
Cluster 4: Sustainability		
	Craciun (2014)	Qualitative – Authors' critical point of view and his own impressions on the evolution of the concepts of sustainability and TBL.
	Goerner <i>et al.</i> (2009)	Quantitative - Exploration of a comparison between a natural ecosystem and a thermodynamic and information theoretical network measurement convention.
	Wang and Lin (2007)	Quantitative - Economic models application: indifference curve, efficient frontier, and optimal solution.

Our clusters are composed of a total of 16 publications. The last five years correspond to 63% of the publications, and of these ten, 40%, are from 2021. About the type of research, we found that ten of the publications are of a qualitative nature (63%), four publications are of a quantitative nature, and the remaining two present a mixed format.

Cluster 1: Social Development

This cluster comprises six publications that have in common the analysis of issues related to the social dimension of TBL, social business model, people's wellbeing, equity between different social strata, and corporate social responsibility, for example.

Hysa et al. (2018) argue that hybrid sustainability- oriented organisations can solve social, economic, and environmental problems with the use of the corporate engine and the profit instrument, thus making capitalism antifragile. Hysa et al. (2018) claim to demonstrate that social business can solve social, economic and environmental problems as it respects the TBL approach. The use of balanced scorecards by international retailers has been studied by Sewell et al. (2017), who assume that these practices illustrate a range of management practices that seek to balance the traditional financial success indicator with socioeconomic development goals. Sroda-Murawska et al. (2021) admit that one of the greatest challenges of today's civilisation is the need to fulfil commitments to build a fair and caring global society. These same commitments also apply to the tourism sector, for Taylor (2017), tourism development is a key feature of the neoliberal ED model. For this author, if the implementation and management of a project is the responsibility of the community, the community will be able to organise itself and its resources in a way that benefits everyone. The study by Usmani et al. (2021) sees corporate social responsibility as being significantly related to food companies due to its great impact and dependence on the environment, economy, and society. The authors empirically evaluate corporate social responsibility initiatives. The impact of recreational housing on community social development within the framework of TBL was explored by Winkler et al. (2015). For these authors, sustainability is seen as a hierarchy consisting of the environment, society, and the economy as a living environment that allows human society to build an economic system that does not threaten the environment.

Cluster 2: Social Entrepreneurship

When we analyse cluster two, which comprises four publications, its focus on studies that address the characteristics of social entrepreneurship becomes evident, as it is one of the tools that support sustainable development.

The study by Atisa et al. (2021) explores ways in which sustainability can be an integral part of decentralisation so that decentralisation is itself a vehicle for sustainable ED outcomes for all. Gu et al. (2021) argue that a comprehensive multi-index evaluation method should be adopted. The authors' results reveal a close relationship between entrepreneurship and SD TBL. The research Gunawan and Dhewanto (2012) present aims to understand how eco entrepreneurship is perceived by successors of family businesses and concludes that they have limited knowledge on this topic due to the lack of information provided by the government. Satar and John (2016) identified the critical success factors that eventually determine the success of social enterprises.

Cluster 3: Economic Development

Cluster three comprises three publications, which are concerned with discussing the concept of TBL ED. They start from these reflections for the construction of an evaluation index on the one hand and for the analysis of desirable characteristics, skills and competences of practitioners on the other.

Hammer and Pivo (2017) offer a standard definition of TBL ED and insight into how the concept is viewed and operationalised by ED practitioners. Assuming that economic interests are not reflected only by financial ratios Liang et al. (2018) developed a new index for assessing

the performance of SME supply chain finance. Saha (2014) points a way forward for ED ethical behaviour, social responsibility, and ecological protection when reflecting on a vision about leadership in the field of global business management.

Cluster 4: Sustainability

Finally, cluster four is composed of three publications, which encompass concerns about the impact of companies' activities. They present a comparison of behaviour between economic activities and the environment that intends to quantify the ED. And a model for accounting for corporate sustainability under TBL.

The publication by Craciun (2014) agrees with TBL's view that companies need to expand their objectives beyond the economic and that they will be judged by their impacts beyond the economic results. The paper by Goerner et al. (2009) examines the relationship between the planet's environment and entrepreneurial economic activities to sustain the wellbeing and health of all planetary civilisational levels. Wang and Lin (2007) present a model that they believe to be of sustainability optimisation since it accounts for the costs and values of corporate sustainability strategies, within the scope of TBL. Wang and Lin (2007) present research that engages in TBL accounting and corporate sustainability management through a systematic framework.

Suggestion for future research

In the table III we detail the scope of research for each cluster and suggest future avenues of investigation.

In cluster 1 - social development – we identified a research agenda that is related to: the analysis of business models and it is important to understand their evolution; with socio-economic development supported by community projects and it will be very useful to understand how you are doing; with the use of TBL as an evaluator of sustainability from the point of view of stakeholders and with corporate social responsibility and we must know the role of TBL in promoting conservation and sustainable tourism.

Table III

Suggestion for future research questions.

Cluster	Research agenda	Future Research Questions
Social Development Hysa et al. (2018) Sewell et al. (2017) Sroda-Murawska et al. (2021) Taylor (2017) Usmani et al. (2021) (Winkler et al. (2015)	Analysis of social business models. Socio-economic development supported by community projects. Use of TBL to assess sustainability from a stakeholder perspective. Corporate social responsibility.	How have sustainable business models evolved? How is the performance of community-based tourism projects, assessed from a TBL perspective? Does TBL promote conservation? And sustainable tourism?
Social Entrepreneurship Atisa et al. (2021) Gu et al. (2021) Gunawan and Dhewanto (2012) Satar and John, 2016)	Analysis between entrepreneurship and TBL SD. How is eco-entrepreneurship perceived in family firms. Critical success factors for social enterprises in pursuit of its social entrepreneurship goals.	What are the strategies to promote TBL's social agenda? What policies are needed to advance the TBL's social agenda? Does TBL's growth drive innovation?

<p>Economic Development Hammer and Pivo (2017) Liang et al. (2018) Saha (2014)</p>	<p>Discussion of the TBL ED concept, evaluation index and analysis of the practitioners' characteristics. Identification of competencies and skills needed for TBL ED leaders.</p>	<p>Bearing in mind the multidimensionality of TBL, what are its impacts on DE? How has the TBL ED framework evolved? Was the evaluation index applied? What are the main difficulties and the results? When we look at DE, do the personal characteristics of TBL practitioners influence the result? What are the benefits of TBL-aligned supply chain management?</p>
<p>Sustainability Craciun (2014) Goerner et al. (2009) Wang and Lin (2007)</p>	<p>Sustainability of TBL ED: discussion and quantification.</p>	<p>Sustainability of TBL ED: discussion and quantification.</p>

Cluster 2 - social entrepreneurship – presents a study of the relationship between entrepreneurship and TBL SD, eco-entrepreneurship in family firms and the success factors of social enterprises. It is important to understand which strategies and policies help promote TBL, and whether innovation is driven by TBL growth.

In turn, in cluster 3 - economic development – we find the discussion of the concept of TBL ED, of an evaluation index of the analysis of the characteristics of practitioners, and of the necessary skills and abilities for TBL ED leaders. It is important to understand if the index was applied and what results were found, if the characteristics of TBL practitioners influence the results and what are the benefits of a supply chain management aligned with TBL.

Finally, in cluster 4 – sustainability – we come across the discussion and quantification of the sustainability of TBL ED. Future research should understand how the tools and models developed are used and what are the difficulties encountered in their application. It is also important to reinforce the study of the relationship between TBL and biodiversity and whether the ED, designed in the light of TBL, benefits the environment.

CONCLUSION

To answer our research questions, we looked for the evidence from published research that links TBL, ED and sustainability. We also investigated whether TBL is being integral to a sustainable ED. The evolution of our work has enabled us not only to provide a reflection of the progress of research in this topic but also to fortify the expandability of the TBL construct to the ED and to identify research routes that should be adopted by academia. We carried out a study of the evolution of publications and citations, a co-occurrence analysis of keywords, a bibliographic coupling analysis and we identified four clusters.

Bearing in mind that, there is a need for the existence of studies that encompass the sustainability rhetoric of TBL more broadly (Hammer and Pivo, 2017; Isil and Hernke, 2017; Walker et al., 2020) and that little attention has been paid to TBL in ED (Hammer and Pivo, 2017), our study provides answers that reduce the existence of this gap.

The reflections provided through the publications analyse, led us to identify some implications for the theory. In fact, in a small number of the publications we analysed, there is criticism

of the TBL, considering that the integration of other dimensions to the TBL may be positive. Furthermore, the expansion of the TBL to issues related to more global sustainability concerns, as opposed to the concentration on companies' core business, questions on the one hand and boosts on the other, the elasticity of the TBL. The mapping of publications and the intellectual structure of the topic we proposed to study is of great interest, as it has a holistic view of TBL. This importance has practical implications, as our work has identified evidence that the three dimensions of TBL are often studied separately.

Understanding the relationship between these paradigms is expanded by our work that strengthens macro and sustainable ED. From the social implication point of view, our article highlights that the importance given to paying attention to the way of doing, to the detriment of the importance given to what is done, should become a beacon for companies that believe in and pursue sustainable ED. Until our work, there was no bibliometric review that analysed the relationship between TBL, ED, and sustainability, and this study is an important contribution to the literature on this topic. On the other hand, it sheds light on future lines of research.

Our study presents certain limitations. The bibliometric literature analysis relies only on articles from the Web of Science, even though this database is classified as one of the most comprehensive databases of peer-reviewed publications, it is not the only one. And the filtering process applied and the use of software may have omitted literature. In addition, other keywords could have been considered, and since there is a continuity of publication of articles, our study only refers to the period studied (1900 to 31.12.2021).

At the end of our analysis, we believe that future lines of research should consider other databases and bibliometric analysis software. TBL should be viewed more holistically, considering the impacts on the ED of each of the three dimensions. Researchers must reflect and adopt the paths we identified earlier in order to allow for the strengthening of ED in the light of TBL.

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