THE SOCIAL IMPACT OF TOURISM RESEARCH

Alba Viana Lora

UNIVERSITAT ROVIRA i VIRGILI

The social impact of tourism research

ALBA VIANA LORA

DOCTORAL THESIS
2023

Ph.D. Dissertation

The social impact of tourism research

Alba Viana Lora

October 2023

Ph.D. Program in Tourism and Leisure

Departament de Geografia
Universitat Rovira i Virgili

Supervisor

Dra. Marta G. Nel-lo Andreu

Departament de Geografia
Universitat Rovira i Virgili

UNIVERSITAT ROVIRA i VIRGILI
Departament de Geografia

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN

AGENCIA ESTATAL DE INVESTIGACIÓN

GRATET
RESEARCH GROUP ON TERRITORIAL ANALYSIS AND TOURISM STUDIES

UNIVERSITAT ROVIRA i VIRGILI

HAGO CONSTAR que el presente trabajo, titulado "El impacto social de la investigación turística", que presenta Alba Viana Lora para la obtención del título de Doctor, ha sido realizado bajo mi dirección en el Departamento de Geografía de esta universidad.

I STATE that the present study, entitled "The social impact of tourism research", presented by Alba Viana Lora for the award of the degree of Doctor, has been carried out under my supervision at the Department of Geography of this university.

Vila-seca, 31 de agosto de 2023
Vila-seca, August 31, 2023

La directora de la tesis doctoral
Doctoral Thesis Supervisor

Marta G. Nel-lo Andreu

"La investigación es el arma más poderosa para cambiar el mundo"
Nelson Mandela

PREFACE

This doctoral thesis was supported by the Spanish Ministry of Science and Innovation through an FPI (Research Staff Training), grant "PRE2018-085470" awarded in relation to the POLITUR project (CSO2017-82156-R) and directed by Dr. Marta G. Nel-lo Andreu. This grant has allowed me to dedicate a total of 4 years full time to the research project and has also provided complementary funding for research visits to the following international academic centers:

1. Universitat Oberta de Catalunya (Spain).
   Research group: NOUTUR - New perspectives in tourism and leisure.
   Period: May – July 2023.
   Funding: Spanish Ministry of Science and Innovation (PRE2018-085470).

2. Universidade do Algarve (Portugal).
   Centre: CinTurs - Centre for Research in Tourism, Sustainability and Wellbeing.
   Period: February – April 2022.
   Funding: Spanish Ministry of Science and Innovation (PRE2018-085470).

Throughout my dissertation journey, I have experienced exciting personal growth. Beyond the five publications that are part of the submitted thesis, I have had the honour to have collaborated in the writing of eight other scientific articles and six book chapters. Some of these articles are currently under review, while three others have already been published in leading indexed journals and subjected to rigorous peer review by experts in the field. In addition, I have presented research results in eleven congresses, conferences or workshops, seven of which are directly related to the doctoral thesis:

- Viana-Lora, A. and Nel-lo-Andreu, M. (2020) "Evaluation of the social impact of tourism research". Mobilities Transforming Destinations, Urban and regional policies,

digital regulatory mechanisms, and place prosperity and sustainability, Universitat Rovira i Virgili.

- Viana-Lora, A. (2021). "Social impact of tourism research. Tourism planning projects". Thesis Presentation Workshop I-2021-2022, Universitat Rovira i Virgili.
- Viana-Lora, A. and Nel-lo-Andreu, M. (2021). "In search of tourism research that generates social impact". 4th International Scientific Conference, "TOURMAN 2021", Restarting tourism, travel and hospitality: the day after, International Hellenic University.
- Viana-Lora, A. and Nel-lo-Andreu, M. (2022). "The social impact of tourism research. Analysis of the National Science Foundation". 2nd NETTRA Conference, Travel and Tourism Research Association.
- Viana-Lora, A. (2022). "Contribution of tourism to the achievement of the SDGs 2030: the case of Spain". The 8th conference of the IATE (International Association for Tourism Economics), University of Perpignan.
- Viana-Lora, A. (2023). "The social impact of tourism research". International Multidisciplinary Congress of Doctoral Students (CIMED), University of La Laguna.
- Viana-Lora, A. (2023). "Social impact of tourism research". II Doctoral Conference on Tourism REDINTUR, REDINTUR and Universitat Oberta de Catalunya.

However, what I value the most is the enriching web of friendships I have built with colleagues from different countries and disciplines. Participation in international workshops and research stays have been real catalysts for this personal evolution. Through these experiences, countless doors have opened to collaborations both related to my thesis project and in other fascinating areas. Each interaction has allowed me to broaden my understanding and reach into the world of scientific research. I am sincerely grateful for how these opportunities have nurtured my personal and professional

development and I am excited to continue to grow and contribute to the collective knowledge.

All the research activity developed in these four years has been enriched by the valuable support provided through various research projects in which I have participated since I have been an active member of the Research Group on Territorial Analysis and Tourism Studies (GRATET) of the Universitat Rovira i Virgili, under the outstanding direction of Dr. Salvador Anton Clavé. The following is a list of these projects:

1. The adaptability of complex tourism destinations in the present era of social, economic and environmental transformation: Innovative paths towards destination resilience – ADAPTOUR.
   PI: Salvador Anton Clavé; Aaron Gutiérrez Palomero.
   Funding Institution: Spanish Ministry of Science and Innovation.
   Period: 01/09/2021 - 01/10/2025.
   Funds: €96.800.

2. Análisis del papel de las políticas territoriales en la gestión de los destinos turísticos en la época de las movilidades – POLITUR.
   Entidad de realización: Universitat Rovira i Virgili
   PI: Salvador Anton Clavé; Antonio Russo.
   Funding Institution: Spanish Ministry of Science and Innovation.
   Period: 01/01/2018 - 31/12/2020.
   Funds: €72.600.

3. Mobilitats turístiques emergents després de la Covid-19: oportunitats i reptes per la recuperació i sostenibilitat a les destinacions de la Costa Daurada i les Terres de l'Ebre (MOBITUR).
   PI: Aaron Gutiérrez Palomero.
   Funding Institution: Diputació de Tarragona.
   Period: 01/01/2022 – 31/12/2022.
   Funds: €14.500.

4. Mobilitat turística en context de pandèmia a la Costa Daurada i les Terres de l'Ebre: reptes emergents i propostes per la planificació sostenible post-Covid-19 (TURISMOB).
   PI: Aaron Gutiérrez Palomero.
   Funding Institution: Diputació de Tarragona.
   Period: 01/09/2021 – 28/02/2022.
   Funds: €13.690.

5. Blue spaces and coastal wellbeing - Espais blaus i benestar litoral: una font de salut, benestar i equilibri per al territorio.
   PI: Marta Nel-lo Andreu.
   Funding Institution: Diputació de Tarragona.
   Period: 01/01/2021 – 31/12/2021.
   Funds: €16.200.

6. Efectes de la COVID-19 en la mobilitat dels turistes a la Costa Daurada i les Terres de l'Ebre (COVTUR-TGN).
   PI: Aaron Gutiérrez Palomero.
   Funding Institution: Diputació de Tarragona.
   Period: 01/06/2020 – 15/02/2021.
   Funds: €14.500.

In addition, Dr. Marta G. Nel-lo Andreu and I were awarded a prestigious competitive prize from the Social Council of the URV, in recognition of the social impact achieved by the research developed in the POLITUR project, linked to the thesis. This recognition is especially gratifying, since the achievement of social impact is the primary objective of this thesis.

ACKNOWLEDGEMENTS

Esta etapa académica termina y quiero expresar mi profundo agradecimiento a todas aquellas personas que la han hecho posible y han contribuido de manera significativa en su desarrollo.

En primer lugar, quiero agradecer tu apoyo y amor incondicional, Úrsula, sin ti este logro no podría haberse conseguido. Por decir sí, apostar por mí, y dejar atrás, a casi 1000 km, una vida entera.

A mi madre y mi padre, por enseñarme siempre el valor de la constancia, la perseverancia y la humildad. Por apoyarme en todas las decisiones de mi vida y por animarme a continuar formándome cuando quise tirar la toalla.

A ti, Yaya, que me iluminas desde el cielo.

A mi hermana Jenifer y mi hermano Alejandro, por llenar de magia y alegría mis días y compartir conmigo los logros alcanzados. A Laura, por ser para mí como otra hermana.

Al Departamento de Geografía de la Universitat Rovira i Virgili y al grupo de investigación GRATET, en especial a la Dr. Marta G. Nel-lo por el trabajo de dirección de esta tesis.

A todas las personas que me han acogido en la Universitat Oberta de Catalunya y en la Universidade do Algarve, contribuyendo a mi desarrollo personal y profesional.

Agradezco el financiamiento del Ministerio de Ciencia e Innovación con su ayuda para contratos predoctorales para la formación. Porque como dicen, la educación es el alma de la sociedad, pero en ocasiones, hay que luchar para conseguirla.

Este trabajo no habría sido posible sin el apoyo de todos, y por ello, mil gracias.

ABSTRACT

This thesis aims to deepen the analysis of the social impact of scientific research in tourism, as well as to explore the instruments available to evaluate and enhance it. The research carried out has culminated in five scientific articles, subjected to a rigorous peer review process and published in journals indexed in recognized impact indexes. Through this body of work, the aim is to address and provide answers to the five research questions posed. In the context of this study, the desire to contribute significantly to scientific knowledge, both theoretical and methodological, regarding the social impact of scientific research, with emphasis on the field of tourism, is based on this study. In order to carry out this work, a thorough analysis of evaluation methods has been undertaken, with the objective of designing a tool that identifies, measures and objectively visualizes the benefits that research provides to society, once the research has been published, disseminated and applied in the field of tourism. This research also delves into the identification of possible ways to enhance this social impact. Thus, it seeks to take research beyond the academic context, turning it into an effective tool to contribute value to society in general. Finally, this thesis should serve to highlight the need for greater awareness among researchers of the potential social impact of their work. This awareness not only has implications for the researcher him/herself, but also for the scientific community as a whole and for the society it serves. It encourages researchers to adopt a more proactive and reflective approach, considering the scope of their research beyond traditional academic spheres.

RESUMEN

Esta tesis tiene como objetivo profundizar en el análisis del impacto social de la investigación científica en turismo, así como explorar los instrumentos disponibles para evaluarlo y potenciarlo. La investigación llevada a cabo ha culminado en cinco artículos científicos, sometidos a un riguroso proceso de revisión pares y publicados en revistas indexadas en reconocidos índices de impacto. A través de este corpus de trabajos, se persigue abordar y proporcionar respuestas a las cinco preguntas de investigación planteadas. En el contexto de este estudio, se fundamenta el deseo de contribuir significativamente en el conocimiento científico, tanto teórico como metodológico, en lo que respecta al impacto social originado por la investigación científica, con énfasis en el ámbito del turismo. Para llevar a cabo este trabajo, se ha emprendido un análisis minucioso sobre los métodos de evaluación, con el objetivo de diseñar una herramienta que identifique, mide y visualice de manera objetiva los beneficios que la investigación brinda a la sociedad, una vez que la investigación ha sido publicada, difundida y aplicada en el ámbito del turismo. Esta investigación también se adentra en la identificación de posibles vías para potenciar este impacto social. Así, se busca llevar la investigación más allá del contexto académico, convirtiéndola en una herramienta eficaz para aportar valor a la sociedad en general. Por último, esta tesis debe servir para resaltar la necesidad de una mayor concienciación entre los investigadores sobre el potencial impacto social de sus trabajos. Esta concienciación no solo tiene implicaciones para el propio investigador, sino también para la comunidad científica en su conjunto y para la sociedad a la que sirve. Impulsa a los investigadores a adoptar un enfoque más proactivo y reflexivo, considerando el alcance de sus investigaciones más allá de las esferas académicas tradicionales.

CONTENTS

TABLES

FIGURES

1. INTRODUCTION

The first chapter of this thesis project is dedicated to the presentation and justification of the thesis, the explanation of the research objectives, questions and hypotheses, the research design and methodology and the structure to be carried out.

1.1. Thesis presentation and justification

In the current context, tourism is considered a major industry, experiencing exponential growth that has a significant impact on local communities and society in general (Rutty et al., 2015). Therefore, tourism research becomes of fundamental relevance to understand and assess the extent of this social impact and, thus, ensure sustainable and equitable tourism development (Deery, Jago and Fredline, 2012).

Therefore, this doctoral thesis is justified on several reasons of utmost importance. First, tourism is not only a powerful economic force globally, but also impacts various social and environmental aspects (Mason, 2020). Consequently, it is essential to investigate and analyze the social impact of tourism research in order to strike a balance between the development of the activity and the well-being of local communities.

Second, tourism research can provide a solid base of knowledge and evidence to support decision-making in policy and strategy formulation in the tourism sector (Thomas and Ormerod, 2017). By having rigorous and well-grounded research, policy makers and tourism professionals can understand the challenges and opportunities present in tourism development, enabling informed and effective decision making that maximizes positive social impacts and minimizes negative ones.

Third, tourism research can contribute to the advancement of society by generating innovative and practical solutions to the problems and challenges facing the tourism industry (Liburd, 2012). This involves identifying best practices, strategies, and approaches to address critical issues such as tourism management in urban destinations, stakeholder

engagement, tourism governance, and mitigating the negative impacts of tourism on local communities and the environment.

And, fourth, assessing the social impact of tourism research can help to improve the quality of research and promote accountability in the academic field (Sordé Martí et al., 2020). By understanding and measuring the social impact of research, researchers can adapt and focus their projects based on the needs and priorities of local communities and society at large (Doyle, 2018). In addition, this assessment can also be useful for measuring the quality of research and ensuring the appropriate allocation of financial resources to research projects that generate greater social impact (Samuel and Derrick, 2015).

The absence of case studies that analyze the social impact of tourism research represents a gap in knowledge, so this thesis aims to fill this gap, provide a greater understanding of these issues and put tourism research on a par with other scientific disciplines with a longer trajectory, in which social impact is more deeply rooted. The interdisciplinarity inherent to tourism research, by encompassing economic, cultural, environmental, political and social aspects, gives this study an innovative value and broad scope (Oviedo-García, 2016). Furthermore, the measurement of the social impact of research has been subject to questioning due to the limitation of traditional approaches based solely on citation indices (Bornmann, 2012). Therefore, there is a need to develop robust frameworks and methodologies to assess and demonstrate this impact more effectively. In this sense, this thesis highlights the importance of assessing and measuring the social impact generated by tourism research, which will help to consolidate the importance of this field of study in academia and society and raise awareness of these issues.

1.2. Hypothesis, research questions and objectives

The purpose of this section is to detail the hypothesis and research questions present in the main objective. This objective is divided into four specific objectives associated with the five articles that make up this thesis.

The hypothesis of this research is that the planning, monitoring and evaluation of tourism research generates benefits in society. The affirmative demonstration of this hypothesis would imply that tourism research that has been previously planned, in which a follow-up process has been carried out to verify that what has been agreed upon is being fulfilled, and, an evaluation has been carried out at all stages, favors the obtaining of positive results and tangible benefits in society. Therefore, this research will have a positive social impact.

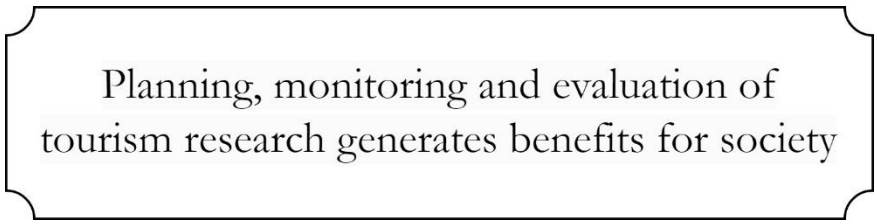

Figure 1: Study hypothesis. Own elaboration.

The development of the research of this thesis was motivated by the following questions:

- Is tourism the object of study in the evaluation of the social impact of research?
- What tools and methods exist for measuring the social impact of research?
- How can a comprehensive methodological framework for assessing the social impact of tourism research be developed and what dimensions and areas should be considered?
- Is there a direct relationship between the social impact of research and scientific impact?
- How can the social impact of tourism research be enhanced?

The main objective of the thesis is:

To analyze the social impact of scientific research in tourism, as well as the instruments available to evaluate and enhance it.

Due to the scope of this objective, it is divided into the following specific objectives to facilitate its analysis:

- To provide theoretical and methodological knowledge on the social impact of research in the social sciences and specifically in the field of tourism.
- To define methods for identifying, measuring and mapping the social impact of tourism research that allow to follow up and control the social impact in the different phases of the cycle of a tourism project, while giving visibility to this impact.
- Promote the social impact of research through the identification of potential pathways for generating impact.

	Research questions	Output
Obj. 1	- Is tourism the object of study in the evaluation of the social impact of research? - What tools and methods exist for measuring the social impact of research?	**Article 1:** Viana-Lora, A., & Nel-lo-Andreu, M. G. (2021). Approaching the social impact of research through a literature review. International Journal of Qualitative Methods, 20, 1-11. DOI: 10.1177/16094069211052189
Obj. 2	- Is there a direct relationship between the social impact of research and scientific impact?	**Article 2:** Viana Lora, A., & Nel-lo Andreu, M. G. (2020). Alternative metrics for assessing the social impact of tourism research. Sustainability, 12(10), 4299. DOI: 10.3390/su12104299
	- How can a comprehensive methodological framework for assessing the social impact of tourism research be developed and what dimensions and areas should be considered?	**Article 3:** Viana-Lora, A., Nel-lo-Andreu, M. G., & Anton-Clavé, S. (2022). Advancing a framework for social impact assessment of tourism research. Tourism and Hospitality Research, 14673584221105007. DOI: 10.1177/14673584221105007
Obj. 3	- How can the social impact of tourism research be enhanced?	**Article 4:** Viana-Lora, A. (2023). The societal impact of tourism research of the Research Excellence Framework 2021. Journal of Policy Research in Tourism, Leisure and Events, 1-16. DOI: 10.1080/19407963.2023.2212336 **Article 5:** Viana-Lora, A., & Nel-lo-Andreu, M. (2023). Pathways for the social impact of research in Barcelona's tourism policy. International Journal of Tourism Cities, 9(2), 481-495. DOI: 10.1108/IJTC-07-2022-0171

Figure 2: Research questions, objectives and outputs. Own elaboration.

1.3. Research design and methodology

Although this thesis is based on a compendium of articles, each chapter has its own methodological framework. Nevertheless, this section attempts to provide a comprehensive perspective on the research design that encompasses the project as a whole. A synthesis of the primary methodological information for each chapter is compiled in Table 1.

	Chapter 2	Chapter 3		Chapter 4	
	Article 1	Article 2	Article 3	Article 4	Article 5
Method	Systematic literature review	Mixed methods with altmetrics	Mixed methods, design of an evaluation framework and application in a case study	Manual content analysis	case study approach and qualitative content analysis
Study area	Global	Global	POLITUR project	United Kingdom	Barcelona (Spain)
Data sources	Web of Science	Dimensions	Interviews	REF	City Hall
Sample size	59	5307	18	12	31
Year of data	Until 2020	2017-2019	2020	2022	Until 2023

Table 1: Methodologies used by chapters and articles. Own elaboration.

Chapter 2 provides a theoretical framework on the social impact of tourism research. To this end, a conceptual exploration is carried out and the first article that is part of this thesis, "Approaching the social impact of research through a literature review", is presented, in which a systematic literature review is carried out to analyze different methods and limitations in the generation of social benefits from research, highlighting the imperative need to address such impact. It also uses VOSviewer software to map the most used keywords in the selected articles and visualize the most relevant terms.

Subsequently, Chapter 3 discusses two additional articles that focus on assessing the social impact of tourism research. The first, entitled "Alternative Metrics for Assessing the Social Impact of Tourism Research" uses alternative metrics, specifically the Altmetric tool, to analyze the social impact of tourism research in social media. It aims to determine the presence and attention received by high-impact tourism articles, as well as explore the correlation between the traditional citation index and the Altmetric Attention Score (AAS). The second article,

"Advancing a framework for social impact assessment of tourism research," presents a comprehensive methodology for assessing the social impact of tourism research. The proposed framework includes three stages of assessment, addresses various dimensions and areas of impact, and proposes a battery of indicators. The validity of the framework is tested through case study analysis in the POLITUR project, linked to this thesis.

In order to further enhance the societal impact of tourism research, Chapter 4 incorporates two additional research articles. The article "The societal impact of tourism research of the Research Excellence Framework 2021" focuses on the societal impact of tourism research in the context of the Research Excellence Framework (REF) 2021. Through a comprehensive analysis of the Research Excellence Framework, the REF 2021 evaluation criteria and tourism impact cases are examined, highlighting potential pathways for generating societal impact in the tourism industry and sources for corroborating impact. Finally, the article "Pathways for the social impact of research in Barcelona's tourism policy" analyzes the influence of research in the tourism policy of the Barcelona City Council, identified as one of the routes to generate social impact. Through a qualitative content analysis, 31 tourism policy documents are reviewed to identify the pathways in which social impact is achieved through research.

1.4. Thesis structure

This section shows the structure of the thesis, illustrated in Figure 3.

Ch. 1	**INTRODUCTION** Presentation and justification of the work, hypothesis, research questions and objectives, research design and methodology and structure.	
Ch. 2	**THEORETICAL FRAMEWORK** - Conceptual exploration: scientific research, the scientific impact of research and funding agencies. - The social impact of research **(ARTICLE 1)**. - Scientific research in tourism: Impact of tourism VS social impact of tourism research.	**Obj. 1**
Ch. 3	**EVALUATION OF THE SOCIAL IMPACT OF RESEARCH** - Evaluating the social impact of tourism research in social media **(ARTICLE 2)**. - Framework and indicators for measuring the social impact of tourism research **(ARTICLE 3)**.	**Obj. 2**
Ch. 4	**ENHANCING THE SOCIAL IMPACT OF RESEARCH** - Pathways to generate social impact and sources to corroborate it **(ARTICLE 4)**. - Influence of research on policy to benefit society **(ARTICLE 5)**.	**Obj. 3**
Ch. 5	**DISCUSSION AND CONCLUSION** Response to the research questions, theoretical and practical contribution and implications, limitations and future research and final conclusion.	

Figure 3: Thesis structure. Own elaboration.

The first chapter corresponds to the introduction and justification of the work, including the objectives, research

questions and hypotheses, as well as the research design and methodology to be carried out and its structure.

Chapter 2 presents the theoretical framework, divided into three sections. The first section contextualizes the subject matter, addressing the term of the research, the funding agencies and the scientific impact of the research. The second section presents a systematic literature review article on the social impact of research. The third section focuses on tourism research and the differences between the terms "tourism impact" and "social impact of tourism research".

Chapter 3 addresses the topic of evaluating the social impact of research, divided into two sections. The first presents the second research article, which measures the social impact of tourism research in social media. The results obtained show the influence of research on networks, but not its benefit on society. For this reason, the second section contains the third article of the thesis, in which an integrated framework for measuring the social impact of research is designed and proposed. In addition, a pilot test of the framework is conducted in a tourism planning project.

Chapter 4 seeks to enhance the social impact of tourism research, and to this end, it includes two sections with the fourth and fifth articles that make up the thesis. The fourth article analyzes tourism studies with social impact registered in the United Kingdom's Research Excellence Framework to identify pathways to enhance impact and sources to corroborate it. The identification of policy influence as a useful way to generate benefits in society motivated the fifth article of the thesis, which consists of evaluating how tourism research influences tourism policy in Barcelona.

Chapter 5 answers the research questions posed, specifies the contributions and theoretical, as well as practical implications derived from the development of the thesis, identifies limitations and suggests areas for future research. Finally, it ends with concluding remarks.

2. THEORETICAL FRAMEWORK

The second chapter of this thesis project focuses its analytical focus on the theoretical framework related to the social impact resulting from the research. To this end, the inquiry covers an exhaustive exploration of various interrelated concepts, fundamental to understand the significance of this phenomenon and presents the first article that makes up this work.

2.1. Conceptual exploration

2.1.1. Scientific research

The term research refers to the set of scientific procedures ranging from the formulation of the hypothesis to the evaluation of the results obtained (Shuttleworth, 2008). Research is defined as an inquiry that involves the collection, analysis and interpretation of data in order to understand or control a specific phenomenon (Mackenzie and Knipe, 2006). In essence, it represents a way of generating valuable knowledge through a cyclical process that includes problem definition, action planning, implementation, data analysis and evaluation of results (Hult and Lennung, 1980). The goals pursued by the researcher when embarking on research are diverse; they seek to solve problems, expand knowledge, and improve competence in the field studied (Hult and Lennung, 1980). According to Kothari (2004), the common objectives of any research are to acquire knowledge about a specific phenomenon, to represent characteristics of situations, people or groups, to determine the frequency of a fact and to test hypotheses. Likewise, Rivero (2013) points out that scientific research must possess certain characteristics, such as being timely, original, objective, well-planned, based on verifiable results and using adequate instruments for data collection. The motivation behind the development of a research can vary, driving researchers to engage in this process, either with the aim of building a professional career in the area, contributing to the service of society or solving problems that have not yet been addressed (Kothari, 2004).

A research study begins with a justification of its need, the definition of the object of study, the formulation of objectives

and the proposal of an initial hypothesis, and then the selection of the appropriate scientific method (Rivero, 2013). It is essential that the research uses appropriate scientific methods to address the problem in question. This implies carrying out relevant tests that allow drawing logical reasoning and obtaining substantiated conclusions (Amaratunga, Baldry, Sarshar, & Newton, 2002). It should be noted that the term "method" should not be confused with "methodology", since the latter refers to the set of procedures and techniques used in the research, while the method is only a part of the methodology (Kothari, 2004). Once the research method has been selected, the sample to be studied will be established and the variables used will be discussed. To collect data, data collection techniques that vary according to the type of research will be applied, the most common being the interview, survey, questionnaire, observation, flowchart and data dictionary (Rivero, 2013).

The quality of the data is crucial and determines the overall quality of the research. Depending on the type of data used, research can be classified as qualitative, quantitative or mixed. Qualitative research uses words, images or icons and focuses on discovering underlying attitudes, opinions, motives and desires. Quantitative research is expressed in terms of quantity and analyzed using statistical techniques (Mackenzie and Knipe, 2006). On the other hand, mixed research combines both approaches and requires additional skills on the part of the researcher, but enriches the research by providing more informative, complete, balanced and useful results (Johnson, Onwuegbuzie and Turner, 2007). The choice of the source for obtaining these data allows the research to be classified as primary or secondary. Research can be classified according to its purpose as basic or applied research. Basic research seeks to develop theories and acquire new concepts without considering their practical applicability, while applied research seeks practical strategies and solutions for specific objectives (Djellal, Francoz, Gallouj, Gallouj and Jacquin, 2003). In addition, research can also be classified as conceptual or empirical. Conceptual research is

related to abstract ideas or theories and aims at extending concepts or reinterpreting existing ones. In contrast, empirical research aims to test a previously stated hypothesis through observation or experimentation (Kothari, 2004). There are other classifications that take into account aspects such as descriptive or analytical characteristics, temporal scope, the result obtained, the period, the level of depth, the manipulation of variables or inference (Scudder and Hill, 1998; Çaparlar and Dönmez, 2016). But, it can be said that all scientific research has in common the development of a fundamental process that drives the acquisition of new knowledge and the evolution of science through the systematic collection, interpretation and evaluation of data (Çaparlar and Dönmez, 2016). Its development is essential for the progress of science, as it drives knowledge, challenges established ideas, solves practical problems, and has a lasting impact on society and on the understanding of the world around us.

2.1.2. The scientific impact of research

Research impact is a relevant issue, especially in the context of public funding. The need to justify the allocation of resources led administrations to seek research with significant scientific impact (Reale et al., 2018). To measure this impact, scientometrics, a discipline that analyzes scientific production using bibliometric analyses on academic literature, has been developed. Bibliometric indicators, such as citations, have historically been used to assess the quality of scientific research and journals (Mingers and Leydesdorff, 2015).

Citations are one of the most widely used indicators to measure the impact of a research. Over time, various tools and databases, such as Google Scholar, Scopus and Thomson Reuters Web of Sciences, have been established that automate citation counting and allow for more accurate bibliometric analyses (Harzing and Alakangas, 2016).

One of the best-known indicators is the Journal Impact Factor (JIF), used in the Journal Citation Reports (JCR). This indicator measures the relative importance of a journal in its field by

dividing the number of citations received by the journal in a given year by the number of articles published by that journal in the previous two years (Archambault and Larivière, 2009). However, it has been recognized that this indicator alone is not sufficient to assess the quality of a journal, and other indicators have been developed, such as the "5-year JIF", the "Immediacy Index", the "Citing Half-life" and the "Cited Half-life" (Bollen et al., 2009). Another tool we found is the SCImago Journal Rank (SJR), which uses data from Scopus to measure the impact of journals and performs a classification by country and branch of knowledge. It has an indicator similar to the JIF but analyzes the last three years (Falagas, Kouranos, Arencibia-Jorge and Karageorgopoulos, 2008). Also with Scopus data we find the Source Normalized Impact per Paper (SNIP), an indicator that measures the impact of the journal by weighting the citations according to the scientific field, having more weight a citation published in a subject field in which it is less likely to get a citation, allowing a more reliable comparison of journals from different fields of study (Leydesdorff and Opthof, 2010).

In addition to assessing the impact of journals, indicators have also been developed to measure the impact of individual researchers. The "h-index", proposed by Hirsch in 2005, measures the distribution of citations of papers published by a researcher and reflects the number of publications with at least "h" citations (Hirsch, 2005). This index tends to increase progressively as the number of years of research increases, therefore, the m-index was invented, which consists of dividing the h-index by the number of years, thus allowing researchers with different years of career to be compared (Hirsch and Buela-Casal, 2014). As an alternative to the h-index, Leo Egghe develops in 2006 in g-index that allows the most cited articles to reinforce the articles with fewer citations, this index shows that X articles have accumulated more than X2 citations, therefore, this index will always be equal to or greater than the h-index (Rosenstreich and Wooliscroft, 2009). Another indicator that measures the quality of the researcher is the i10-index added in 2011 by Google Scholar to the researcher's profile, it

consists of the number of articles that have been cited at least 10 times (Nigam and Nigam, 2012).

When basing scientific impact on the number of citations, there are some problems to take into account; citations vary over time, depend on the subfield in which we are located and change depending on the dynamics of the article (Sinatra, Wang, Deville, Song and Barabási, 2016), in addition, they make it impossible to measure days or weeks after publishing the article, since the first citations will probably appear after a few months (Neylon and Wu, 2009).

Despite the usefulness of these traditional metrics, it is important to recognize that they are mainly focused on the academic impact within the scientific community. However, for research to have a significant scientific impact, it must first have a social impact (Dalampira and Nastis, 2020).

2.1.3. Funding agencies

Science has been the compass that has guided humanity towards new horizons and its adequate funding is essential to maintain this constant search for discoveries and developments that transform society. But funding agencies have directed their efforts towards the promotion of research with a marked academic impact, based on the hypothesis that the execution of high-quality research could lead to tangible benefits for society (Bornmann, 2013). However, it is pertinent to point out that indicators of an academic nature lack the aptitude to quantify social returns (Ozanne et al., 2017), it has even been corroborated that a portion of this research of excellence lacks any resonance in the social fabric (Smith, 2001). Thus, the absence of a correlation between the scientific impact and the social impact inherent to the research is evident (Bornmann, 2013). As a consequence, funding entities currently direct their resources with the purpose of promoting the generation of social benefits (Samuel and Derrick, 2015). To this end, both national and international programs have incorporated specific sections aimed at outlining the potential social impact that could be derived from the research in question.

The calls for funding research, development and innovation (R&D&I) projects in Spain have incorporated social impact as an evaluation criterion since 2019, which represents a significant change in the assessment of the benefits of science for society in the process of awarding funds (Agencia Estatal de Investigación, 2019). This year's call offers two project modalities: "Knowledge Generation Projects" and "Research Challenges Projects". Both modalities take into account aspects such as the dissemination of results to society, open access to scientific information, the gender dimension, social inclusion in areas such as disability and job creation, among others. It is important to note that the score awarded in the evaluation varies according to the modality. In the case of "Knowledge Generation" projects, the social and economic impact represents a total of five points out of one hundred, while in "Research Challenges" projects, this criterion amounts to ten points out of one hundred, and in the case of projects related to the Bioeconomy, it reaches fifteen points out of one hundred.

In these calls for proposals, an intermediate follow-up report is requested, as well as a final report at the end of the project. The final report, developed within three months after the conclusion of the project, must detail the socio-economic impact that the project has had on the State and the region in which it was carried out. In addition, subsequent scientific-technical follow-ups (ex-post follow-up) are foreseen to evaluate the effectiveness and overall impact of the call.

At the European level, the funding of research projects is carried out through various bodies and programs, the main one being the Horizon 2020 program, with a budget of approximately 80 billion euros for the 2014-2020 period (European Commission, 2015a). This program succeeded the 7th Framework Program for Research and Development (FP7), in force from 2007 to 2013.

In the specific case of FP7, this program included audit techniques to evaluate projects during their implementation and up to five years after their completion. Among the aspects

evaluated were the expected potential impact in economic, competitive and social terms, as well as the plan for disseminating the results. At the end of FP7, a results report was issued assessing the impact of the projects on citizens and society in general. This program sought the active participation of citizens in research processes to address the most urgent social problems and strengthen society's trust in science (European Commission, 2015b).

In Europe, Horizon 2020 is structured in 7 main funding areas, with a total budget of 77,028 million euros. Two of these areas are especially focused on social aspects and their impact on society. The "Societal Challenges" area focuses on EU policy priorities, covering challenges related to health, demographic change and well-being, food security, sustainable agriculture and forestry, marine, maritime and inland water research, bioeconomy, secure, clean and efficient energy, smart, green and integrated transport, climate action, environment, resource and raw material efficiency, inclusive, innovative and reflective societies, as well as safe and secure societies (European Commission, 2015a).

The "Science with and for Society" area aims to establish effective cooperation between science and society, recruit new talent for science and align scientific excellence with social awareness and responsibility. This area is based on responsible research and innovation (RRI), seeking to broadly involve society in research and innovation activities, increase access to scientific results, ensure gender equality in both the process and content of research, consider ethical aspects and promote both formal and informal science education (European Commission, 2015a).

Both areas are focused on the development of science to improve the life of the citizen, emphasizing the importance of society in research, but what value does this aspect have in the evaluation of proposals? Although the selection criteria are set out in each call, the Horizon 2020 guide sets out three main criteria that will be evaluated by the experts: the excellence of the proposal, the impact of the results and the

quality and efficiency of the project implementation. The impact will be assessed on how the proposal will contribute to the social impact. In addition, H2020 has a monitoring system marked in the grant agreement that includes periodic reports and a final report covering the economic and social impact of the proposal. It also highlights the importance of the funded projects contributing to the United Nations Sustainable Development Goals (SDGs), with a target of at least 60% of the budget going to sustainable development.

Horizon Europe, the successor to H2020, which came into force in 2021 and will run until 2027, represents a step forward in promoting social impact in research and development at the European level. With a focus on the UN Sustainable Development Goals (SDGs), this program gives greater visibility to social impact, introducing significant changes to strengthen the relationship between science and social needs. One of the fundamental pillars of Horizon Europe is the active participation of society in research, thus seeking to ensure that the results are available and accessible to the entire population through the obligation of open access publication. The program also addresses global challenges with the aim of providing concrete benefits and strengthening the incorporation of research and innovation in society, thus consolidating its role as an engine of progress and welfare for European communities and beyond.

The European Union also has other funding agencies, such as the European Cooperation in Science and Technology (COST), as well as other research programs, such as the COSME program and the LIFE program. COST funds research networks to address scientific, technological and societal challenges, with an emphasis on collaboration as a tool for advancing research. The evaluation of COST projects includes a weighting of 15 points out of 50 for impact as an evaluation criterion, which must clearly identify the benefits in science, society and competitiveness, as well as contribute to the creation and transfer of knowledge and favor the dialogue between science and the general public (COST, n.d.). On the

other hand, the COSME program supports the financing of European Union companies, especially small and medium-sized enterprises (SMEs), to strengthen their competitiveness and sustainability, in addition to promoting entrepreneurship among young people and women. The evaluation of proposals under COSME is carried out in two stages, assessing criteria such as the relationship with the objectives of the call, impact on the target audience and cost efficiency. In the impact aspect, the proposal is required to present realistic and clear indicators to quantify the real impact of the proposal on the population. The six best proposals are further evaluated in a second stage in which the quality of the proposal is incorporated as a selection criterion, with impact scoring 20 points out of 100 (European Commission, n.d.). The LIFE program is intended to finance environmental conservation projects, with specific sub-programs for the environment and climate action. In the evaluation of both sub-programs, sustainability is assessed with a score of 15 points out of 100, considering the social and economic effects of the proposal and its continuity after funding (European Commission, 2020).

In addition to Europe, other countries and regions of the world also have funding agencies that value social impact as an important part of the evaluation of research proposals. In the United States, for example, the National Science Foundation (NSF) supports research with a focus on creating knowledge that will have a transformative impact on the future. Proposals must meet three basic principles: high scientific quality, contribution to societal goals, and appropriate metrics. Both intellectual and societal impacts are considered in the peer review process for funding (National Science Foundation, 2020). In Brazil, the public funding agency "FINEP" focuses on economic and social development through the promotion of research. Its selection criteria include excellence, impact, implementation and relevance of proposals (Van den Besselaar, Flecha and Radauer, 2018).

Despite the integration of the social criteria outlined above, there remains a conundrum regarding the delineation of the

manifestation of social impact in the proposals, as well as the methodology that the evaluators will use for their evaluation.

2.2. The Social Impact of Research

Article 1: Approaching the social impact of research through a literature review

Viana-Lora, A., & Nel-lo-Andreu, M. G. (2021). Approaching the social impact of research through a literature review. *International Journal of Qualitative Methods, 20*, 1-11. DOI: 10.1177/16094069211052189

Abstract

The article carries out a systematic literature review on the social impact of research in all fields of study. To this end, this study has compiled the publications on the subject using the Web of Science database and the most relevant terms have been mapped using the VOSviewer tool. The aim of the article is to advance and provide knowledge on the key aspects to be taken into account for research to generate social benefits and to analyse the main methods and instruments used to assess the social impact of research. At the same time, this article serves as a point of reflection to raise awareness, on a recent topic, of the limitations that arise in evaluation and research gaps that can be addressed in future research. This line of research has been in existence for just over ten years. International programmes, such as Horizon Europe, highlight the impact channels and, in the field of social sciences, specific methodologies such as communicative communication are being developed. To the best of our knowledge, this is the first study to analyse the subject from a global point of view, without specifying the field of study, providing a conceptual map of the subject.

Keywords: Social impact of research, social impact assessment, societal impact, benefits of research, literatura review

2.2.1. Introduction

During periods of war, such as World War II, Vannevar Busch (1945) emphasised the importance of research in the report "Science" (Lima and Wood, 2014). It was a complicated period in which the field of nuclear physics was the main benefactor of scientific funding (Bornmann, 2012). Governments' interest in funding research was motivated by the desire for military, economic, medical, etc. benefits (Bornmann, 2012).

Over time, science, originally focused on the development of theory, evolved to focus on the empirical (Gibbons et al., 1994; Bornmann, 2014; Hill, 2016). This shift is partly driven by funders, who are obliged to provide evidence to justify the investment of money in research (Boshoff and Esterhuyse, 2016). They want the results obtained to be measurable (Bornmann, Haunschild and Marx, 2016), especially when public coffers are empty, making it a priority to evaluate science internally in order to fund only the research that achieves the highest scientific quality (Bornmann, 2012; Bornmann, 2013).

Social impact was considered an inevitable consequence of the development brought about by science (Lima and Wood, 2014). Evaluation systems, which focus on scientific impact, consider that research with high academic impact generates benefits for society (Smith, 2001; Bornmann, 2013). This assumption is not always valid; there is research with high scientific impact that has not generated any benefit to society (Smith, 2001). For this reason, funding agencies are increasingly aware of the need for research that clearly identifies societal impacts (Holbrook and Frodeman, 2011; Derrick and Samuel, 2016). Demonstrating this social impact involves demonstrating a knowledge output of potential social value, the adoption of knowledge by social actors or the effect of use on some segment of society (Boshoff and de Jong, 2020). There has been an evolution in which demonstrating the social impact of research has become a priority in higher education (Fotaki, 2020), it is currently the great challenge for academics (Lauronen, 2020). Social impact has been positioned alongside teaching and research as the triple mission of higher

education institutions (Bornmann, 2013; Van den Akker et al., 2017; Fotaki, 2020).

Organisations such as the National Science Foundation (NSF), the main body that funds science in the United States, sets out the three basic principles to be met in order to obtain funding: high quality, contribution to social objectives and appropriate metrics (National Science Foundation, 2020). In Europe, the most important funding programme, Horizon Europe, proposes as an innovative approach the key pathways for achieving societal impact, which consist of addressing EU policy priorities and global challenges through research and innovation, delivering benefits and impacts through research and innovation missions, and strengthening the uptake of research and innovation in society. This approach seeks regular feedback on the effects and benefits of the programme to European science, the economy and society at large (European Commision, 2021).

Social impact is not always linked to a social benefit, it may be a socially irrelevant impact or directly have produced a negative effect (Molas-Gallart and Tang, 2011; Bornmann and Marx,2014; De Silva and Vance, 2017). Social impact is categorised as direct or indirect (Alla et al., 2017) depending on whether the research results have led to social improvements (direct impact) or whether these results are used as a basis for further research that does develop benefits in society (indirect impact) (Van der Weijden, Verbree and Van Den Besselaar, 2012).

Bornmann (2013) distinguishes three types of social impact; social impact as a product, resulting from the application of the knowledge generated, social impact as a use of knowledge, referring to references, and social impact as a social benefit, understood as the effects of the use of research results. The concept of social benefit is broad and there is no clear consensus (De Silva and Vance, 2017), for some authors it is the contribution of research to the social capital of a nation (Bornmann, 2012), others refer to social relevance (Holbrook

and Frodeman, 2011), social quality (Van der Meulen and Rip, 2000) or public values (Bozeman and Sarewitz, 2011).

The social impact of research has been considered a change in behaviour motivated by a previous research effort (Spaapen and Van Drooge, 2011; Esko and Miettinen, 2019). This research has, for example, led to the development of new applications and solutions that solve existing societal problems (Spaapen et al., 2011). It is the use of the research result that generates a benefit or influence (Lima and Wood, 2014; Wilsdon et al., 2015). To do so, the result has to be produced, published and transferred to society (Flecha, 2018). In this sense, transfer refers to the use of that knowledge (Pulido et al., 2018). Measuring social impact is so complex that evaluation systems have been developed such as alternative metrics that relate the relevance of research in social media to the social impact of the research. There is political interest in developing alternative metrics (Bornmann, Haunschild and Adams, 2019), funders are interested in these non-traditional metrics (Tonetti, 2019) because they see them as an opportunity to assist expert decision makers in a peer review process (Bornmann, 2014). This article seeks to conduct a systematic literature review on the social impact of research in all areas of study, to identify and determine the keys to achieving social impact, the measurement frameworks used, the limitations of measurement and an agenda for future research. To this end, it has been structured in four sections, followed by an introduction in Section 1, Section 2 describes the method used to carry out this systematic literature review, Section 3 contains the main results obtained, and finally, Section 4 contains a discussion and conclusion on the analysis carried out.

2.2.2. Method

This article uses the systematic literature review method to extract all scientific publications in the English language that have been produced up to 2020 on the social impact of research. The systematic literature review allows us to identify, evaluate and interpret data on a specific research topic

(Ramírez and García-Peñalvo, 2018), for an objective and theoretical discussion (Rother, 2007). Its use will allow us to test a specific hypothesis or develop a new one, summarise previous work or extend already developed theories and carry out a critical evaluation of the literature analysed (Xiao and Watson, 2019). This technique is used as a research strategy because it is an evidence-based practice, which allows for the identification of gaps, deficiencies and trends in the current evidence, while enabling the focus of future research on the topic (Petticrew and Roberts, 2008; Munn et al., 2018). In addition, it uses organised and transparent procedures that allow for replicability of the study (Littell, Corcoran and Pillai, 2008). The VOSviewer software is also used to map the most frequently used keywords in the selected articles and to visualise the most relevant terms at a glance. The operation of this software consists in the calculation of a similarity matrix based on co-occurrence, which it translates into an organised map, therefore, it is based on the visualisation of similarities (Van Eck and Waltman, 2010). It is frequently used in literature analysis (Shah et al., 2019), as it allows the mapping of a large number of elements (Van Eck and Waltman, 2010) in a simple way (Orduña-Malea and Costas, 2021). Its use has allowed us to organise key ideas and structure the results section.

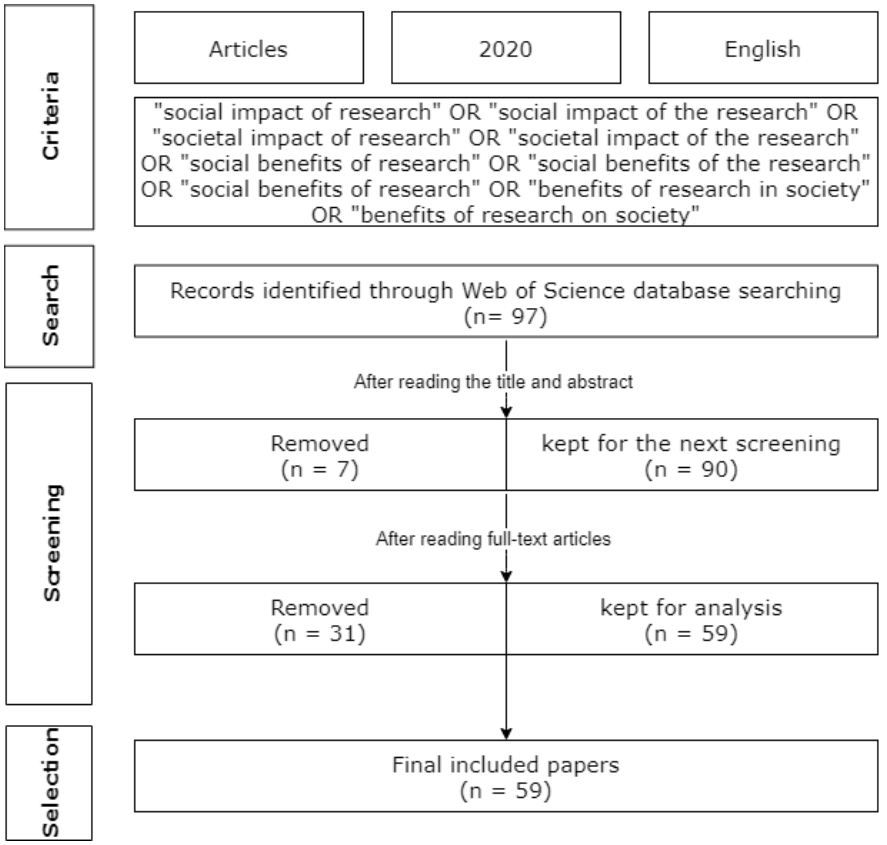

*Figure 4: Execution stages of the systematic literature review. Own elaboration. *n = number.*

The publications for the analysis were extracted from the Web of Science, which provides a comprehensive search and has access to multiple databases with research in all areas of study. It is considered a high-quality database (Shah et al., 2019) that ensures well-structured scientific content (Mikki, 2009). It allows specific searches and has various analysis tools (Moreno-Guerrero et al., 2020). Several studies use the Web of Science for bibliographic searches (Soosaraei et al., 2018; Moreno-Guerrero et al., 2020), as it is a data source with a rigorous system (Chavarro, Ràfols and Tang, 2018). The criteria for inclusion in the Web of Science are stricter than in other databases, and therefore, even though they may host fewer publications (Ball and Tunger, 2006), their choice is motivated by the search for objectivity and quality rather than quantity.

The first phase consists of the search for data, for which the following search algorithm was used to capture the maximum number of publications related to the subject matter : "social impact of research" OR "social impact of the research" OR "societal impact of research" OR "societal impact of the research" OR "social benefits of research" OR "social benefits of the research" OR "social benefits of research" OR "social benefits of research" OR "benefits of research in society" OR "benefits of research on society". The single use of the keyword "social impact" results in thousands of publications that are not related to the objective of this study, it is important to note that we are looking for publications related to the social impact generated by the research. The search strategy yielded 97 publications. The inclusion criteria applied in this process were twofold. First, all databases indexed in the Web of Science were selected and all collection was marked. Second, the "Advanced Search" was used to check the "Topic" box which searches on title, abstract, author keywords and Keywords Plus and the search algorithm was applied.

The second phase consists of filtering the publications with the exclusion criteria explained below. All the results are entered into an Excel sheet, a first screening filter is passed in which the authors, through reading the abstract and title, make justified exclusions of articles whose main objective was not the social impact of the research. This process resulted in a total of 90 publications. These publications passed a second screening filter in which the authors read the full articles and excluded 31 publications because they were published in a non-English language or had a main objective that was not the social impact of the research.

The third phase is based on the selection of publications. The search strategy and the application of the inclusion and exclusion criteria explained above allowed us to select 59 articles for the reading, review and analysis process, from which the results in the following section will be extracted.

2.2.3. Results

In this section we provide a descriptive analysis of the initial sample, 59 publications, and, after a full reading and analysis of the publications, we highlight the most relevant themes. Exploring the theoretical field allows us to provide a preliminary conceptual map of existing research.

It is from 2011 onwards that interest in this subject began to increase, with 56 publications analysed, 95% of which are concentrated in this last decade. The study sample consists of 23 conceptual and 36 empirical publications. The predominant scientific areas are Social Sciences and Humanities with 17 publications and Life and Health Sciences with 14 publications. The two oldest articles (Swinnen and de Gorter, 1998; Wood and Pardey, 1994) refer to the area of agricultural research to reflect the effects of research on the level of production and to establish public policies in this area.

To facilitate the study, this section is structured in three sections that seek to advance the analysis and provide knowledge on the key aspects to be taken into account to ensure that research generates social benefits, the main methods and tools used to assess the social impact of research, and the limitations that arise in evaluation.

Moving towards social impact: key issues

First, a mapping of the most relevant terms has been carried out with the VOSviewer tool, which allows us to visualise the 30 most frequently used words, with a minimum occurrence of 10 times. The result is shown in Figure 5 below. The 30 words have been structured in 4 clusters according to occurrence. The most used terms are "research" and "societal impact", but the image shows the importance of the terms "assessment", "evaluation", "Stakeholder", "productive interaction", "case study", "study", "altmetric", "twitter", "social medium", among others, which gives us a first conceptual picture of research in this field. These highlighted words are those associated with the concept of social impact of research.

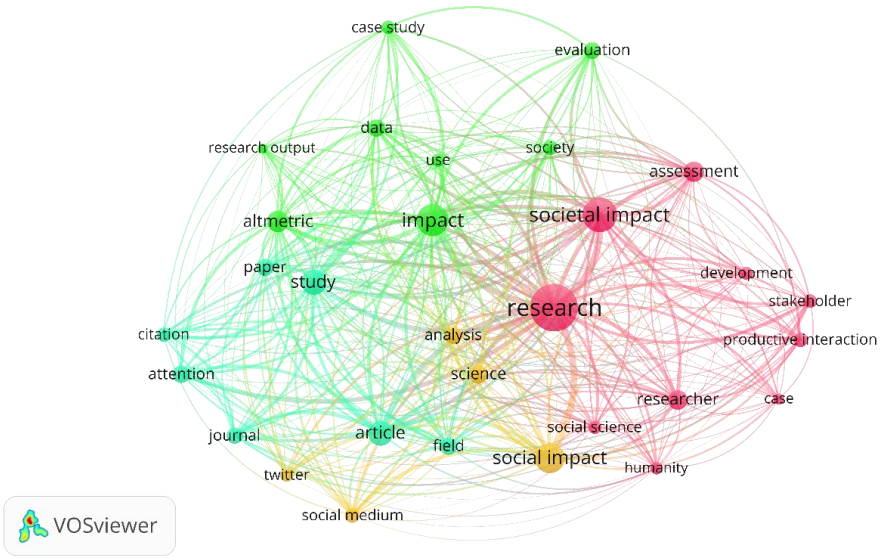

Figure 5: Bibliographic map of the most relevant words in the social impact research literature. Own elaboration.

Achieving social impact is a complex issue, some of the articles reviewed develop a number of key ideas used to achieve social impact in research. Muhonen, Benneworth and Olmos-Peñuela (2020) develop **12 main pathways** to take into account to produce social impact:

1. The interactive dissemination pathway; 2. The collaboration pathway; 3. The public engagement pathway; 4. The expertise pathwaym; 5. The mobility pathway; 6. The 'anticipating anniversaries' pathway; 7. The 'seize the day' pathway; 8. The social innovation pathway; 9. The commercialisation pathway; 10. The 'research engagement as a key to impact' pathway; 11. The knowledge 'creeps' into society pathway; 12. The building 'new epistemic communities' pathway.

Anticipation, coordination and planning of research will be the starting point. Anticipation can be marked by the incorporation of social criteria in funding programmes (Bornmann, 2013), will make researchers take social impact into account and strive to identify it. In this way they also accept the fact that, in addition to scientific merit, their

research can be judged by its potential impact on society (Holbrook and Frodeman, 2011).

It is necessary to define societal goals when planning research and **connecting with stakeholders** will be essential for this (Willebrands and Russo, 2020). Stakeholder collaboration enables the identification of social problems, making research the tool to solve them. This interaction developed during the research process makes it possible to identify contributions to social impact (Spaapen and Van Drooge, 2011). Eschenbach's (2017) study showed that the incorporation of the stakeholder approach from the beginning of the COSYNA project increased awareness of the need to understand the system, developed an observational approach based on scientific knowledge and increased cooperation to improve existing services.

In this same line of collaboration, other authors such as Redondo-Sama et al. (2020) consider it necessary to apply a **communicative methodology** based on doing science with society, not only for them, in order to achieve social impact. This same study also highlights the importance of **evaluation at all stages of research** (ex-ante, in-itinere and ex-post). Ex-ante evaluation marks the potential impact of the research, in-itinere research makes it possible to identify possible errors and mitigate them, and ex-post research facilitates the identification of the social impact caused (Redondo-Sama et al., 2020).

Proposals for assessing the social impact of research

The literature review allowed us to extract research that has as its main objective the measurement of the social impact of research. Social impact is a very complex phenomenon to measure because of its diverse interpretations and the difficulty in finding a valid measurement system (Lauronen, 2020). There are various evaluation methods that vary depending on the research methodology (Tellado et al., 2020).

Lauronen (2020) separates measurement, which is obtained from multiple systems, indicators and interactions between researchers and stakeholders, from the sources from which data is extracted to evidence impact, metrics, narratives, surveys, etc. Sivertsen and Meijer (2020) collect frameworks for this measurement; theory of the interactive dynamics between science and society, Payback Framework, ERIC model, knowledge flows framework, Contribution Mapping, SIAMPI, IMPACT-EV, ASIRPA, etc. While for Bornmnann (2013) the forms of measurement are summarised in econometric studies, surveys and case studies.

This study has separated the analysis into articles dealing with evaluation through; case studies, alternative metrics, productive interactions, interviews and evaluation reports.

Case study

The **case study** is the most widely used method for evaluating the social impact of research (Bornmann and Marx, 2014). It is considered the best option for measuring this type of impact (Bornmann, 2012; Tahamtan and Bornmann, 2020), as despite the complexity of measurement (De Jong et al., 2014) it explains the impact in a way that is adequate to meet governmental expectations (Bornmann, Haunschild and Adams, 2019). It is used in the UK's Research Excellence Framework (REF) and its results are used as a basis in various research such as Hanna et al. (2020), Hill (2016) and De Jong et al. (2014).

Chams et al. (2020) develop a case study in the Spanish agri-food field, more specifically to the rice cultivation of the Ebro Delta (Catalonia), applying the ASIRPA methodology, developed to analyse the trajectory of a project in real time and assess the impact of the research. This analysis highlighted various impacts such as job creation, empowerment of women in the agri-food sector and enhancing the attractiveness of the rice industry for the young generation.

Cunha et al. (2012) measure the social return on investment of a case study on the maritime sector. To do so, they develop a

system of indicators classified into seven areas (employment, working conditions, learning and growth, social return, financial return, environmental effects and investment rate). In the analysis developed, the most representative indicators were job creation, the use of renewable energies, the level of employee training, regional development, national and European policy and productivity growth.

Alternative metrics

The measurement of the social impact of research on social networks through **alternative metrics** (altmetrics) is on the rise, and the IMPACT-EV project calls it Social Impact in Social Media (SISM) (Pulido et al., 2020). Altmetrics is seen as an interesting opportunity to measure scientific impact (Bornmann, Haunschild and Marx, 2016), because the data is immediately available and the openness of the data allows for easy extraction (De Silva and Vance, 2017). Bornmann (2014), in addition to the speed and openness of data, highlights as a benefit the possibility of measuring impact beyond science, to products that need not be academic. Social media has become an easy tool to encourage the dissemination of research results (Pejić-Bachet al., 2020). Facebook and Twitter can point to work that is of interest outside the field of science (Bornmann, 2015) and bloggers generate content and engage in the intellectual process, citing scientific articles to neutrally present the details of a study and discuss a social phenomenon (Jamali and Alimohammadi, 2015).

There are researches that perform data collection directly from social networks (Pulido et al., 2020; Kolahi and Khazaei, 2018), others that use the Altmetric Attention Score (AAS) indicator (Sedighi, 2020; Viana-Lora and Nel-lo-Andreu, 2020; Garcovich and Adobes-Martin, 2020; Dardas et al., 2019; Cho, 2017), an indicator developed by the company Digital Science to measure social impact in social networks by means of an algorithm that weights the appearance of research in numerous sources such as news, blogs, social networks, and other research that uses the indicator MHq' (Bornmann, Haunschild and Adams, 2019), an indicator specialised in

counting data with many zeros, typical in altmetrics data, developed by Bornmann and Haunschild (2018).

The results of this research highlight: publications with higher interest for citizens (Pulido et al., 2020; Kolahi and Khazaei, 2018), the low presence of research in social media (Pejić-Bach et al., 2020; Viana-Lora and Nel-lo-Andreu, 2020; Garcovich and Adobes-Martin, 2020) and in public policy documents (Tonetti, 2019; Bornmann, Haunschild and Marx, 2016), the positive but irrelevant correlation between scientific and social impact (Sedighi, 2020; Viana-Lora and Nel-lo-Andreu, 2020; Garcovich and Adobes-Martin, 2020; Kolahi and Khazaei, 2018), the relationship between the online attention an academic paper receives and the policy citations it generates (Kale et al., 2017), medical research as the main area of study with the highest online presence (Cho, 2017), the use of Twitter at the end of the project rather than throughout the lifetime of the project (Pejić-Bach et al., 2020), the poor accessibility of some tools in countries such as China (Garcovich and Adobes-Martin, 2020) and the higher social media score of publications that reference social impact (Bornmann, Haunschild and Adams, 2019).

Productive interactions

The **productive interactions approach**, developed in the SIAMPI project, is another tool used in measuring the social impact of research. It is based on the relationship that researchers establish with all stakeholders, that is, with all actors involved in the process leading to social impact (De Jong et al., 2014). This approach makes it possible to identify the contributions that lead to social impact at each step of the research, at the beginning, for example, with a discussion, at an intermediate period, with the creation of a protocol, or at the end of the research, with a product or service (Spaapen and Van Drooge, 2011). Researchers are aware of the importance of their work and consider productive interactions a precondition for successful research (Molas-Gallart and Tang, 2011). Spaapen and Van Drooge (2011) develop a series of baseline indicators to measure productive interactions such

as the number of face-to-face communications with user communities, the number of presentations to non-professional audiences or the contracts, licenses, sponsorships resulting from these interactions.

Esko and Tuunainen (2019) evaluate the social impact of a Finnish research group by analysing productive interactions. The study found that the interactions had contributed to urban policy change in the Helsinki area.

Eschenbach (2017) analyses the productive interactions introduced since the start of the COSYNA (Coastal Observing System for Northern and Arctic Seas) research project, leading to technological development, increased interest in understanding the developed system and the use of the developed products by national authorities, companies and other research institutions.

De Jong et al. (2014) selects four ICT projects from the REF and clarifies that productive interactions have made it possible to observe the impact of the knowledge developed.

Molas-Gallart and Tang (2011) use productive interactions to measure the social impact of BRASS (Centre for Business Relationships, Accountability, Sustainability and Society) and found that stakeholders were involved in research activities, recruitment was encouraged, a new institute was created, policy documents and recommendations were developed.

Interviews

Interviews have been another tool identified to measure the social impact of the research. Tellado et al. (2020) use this formula to discover the social impact that the WIEGO (Women in Informal Employment: Globalizing and Organizing) project has had on society. The visibility given to women victims of gender-based violence or the development of policies were two of the localised impacts. Duque et al. (2020) apply the interviews to the field of special education and identify the achievement of Sustainable Development Goal 4, through improved participation, learning opportunities and group cohesion of students with special needs, transformation of

schools to meet these needs, improved student learning, knowledge transfer in schools, dissemination of scientific publications and sustainability of the impact achieved. Esko and Miettinen (2019) seek to assess the social impact of educational science research by conducting interviews with a Finnish research group. Providing means to help children with difficulties to achieve study goals, the expansion of information through networks, the development of practical approach to dealing with dyslexia and the promotion of literacy were the main results of this study.

Assessment reports

Bornmann and Marx (2014) propose measuring the societal impact of research through an **assessment report** reflecting the state of research and knowledge available to society. This report will be conducted by scientists and reviewed by peers (scientists and stakeholders). It consists of an analysis that will report the results of the research in a language understandable outside the scientific community.

Limitations of social impact assessment of research

In the literature review we have highlighted as an important result the limitations that arise when measuring the social impact of research. The difficulty in linking an impact to a specific research result in the attribution problem, the most frequently mentioned in the literature (Spaapen and Van Drooge, 2011; Bornmann, 2012; Bornmann, 2013; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020; Tahamtan and Bornmann, 2020). The causality problem, characterised by the impossibility of detecting which cause has given rise to the impact, is another of the main problems encountered (Bornmann, 2012; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020). The impact is international, so identification is further complicated, and the time scale is often long, so when measured the impact may not yet exist (Bornmann, 2012; Bornmann, 2013; Bornmann, Haunschild and Adams, 2019; Sivertsen and Meijer, 2020).

The lack of standardisation (Lauronen, 2020; Tahamtan and Bornmann, 2020), methodology, metrics and concrete tools (Tahamtan and Bornmann, 2020), coupled with the lack of consensus in data collection (Spaapen and Van Drooge, 2011), make it difficult not only to measure but also to compare different studies, as there is no single measurement instrument or model used by institutions (Bornmann, 2012). And even the use of already non-existent tools has been detected, such as the web www.societalimpact.info used by Niederkrotenthaler, Dorner and Maier (2011).

Using quantitative indicators raises the problem of, for example, assessing more how many people have used a research rather than who and why (Bornann, 2014). Impact should be determined by the type of message published and not by the number of messages published (Pulido et al., 2018).

A key element in evaluation is peer review, when measuring social impact evaluators need to understand the social context of the research (Bornmann, 2013), but this is not always the case. Reviewer panels are often categorised by discipline; however, social impact is interdisciplinary so there are problems in identifying it (Hill, 2016). Smith (2001) considers it a process that is "slow, expensive, ineffective, biased, prone to abuse, anti-innovative, and something of a lottery".

The case study, although the most recommended tool for social impact assessment, does not meet all the requirements of a social impact framework (Bornmann, 2014). Comparing several studies becomes impossible due to the uniqueness of each case (Bornmann, Haunschild and Adams, 2019). The excessive labour required and its cost make it an unaffordable option (Bornmann, 2012; De Jong et al., 2014; Bornmann, Haunschild and Adams, 2019).

Alternative metrics, despite having readily available data, also present problems in measurement. It is not a stable model, data can be obtained that varies depending on the source (Cho, 2017; Bornmann, 2014), so data needs to be examined with caution, as there is a possibility that it may have been

manipulated with fake accounts, boots, etc. (De Silva and Vance, 2017; Cho, 2017; Bornmann, 2014). In addition, platforms can be influenced by marketing (Bornmann, 2014), making the data less credible.

The method of productive interactions also presents difficulty because of the complexity of interactions, networks can change and the information that is developed can be disseminated in various directions (De Jong et al., 2014).

2.2.4. Future research

This literature review has shown that the social impact of research is a growing topic for research organisations and science in general. Several advancements have been identified with fruitful results that can inspire further developments in the field.

The evaluations analysed are located at a specific point in time, it is true that evaluation at the different stages of research (ex-ante, in-itinere and ex-post) is theoretically addressed (Redondo-Sama et al., 2020), but no empirical study has been detected that makes this temporal comparison. The importance of monitoring and evaluation at all stages to plan, coordinate, direct, correct and achieve social benefits calls for future research to develop and apply an ex-ante, in-itinere and ex-post evaluation framework. This temporal comparison could detect problems at different stages that will serve to alert other researchers to avoid making the same mistakes.

A future research opportunity would be to apply the different evaluation metrics detected in this analysis in the same research, to verify if there are different results depending on the tool used.

Measuring social impact through social media has been widespread in the last decade, but there is a paucity of research that captures the type of profile that interacts with research outputs in social media.

This analysis has allowed us to identify the problems encountered in assessing the social impact of the research.

Future research can address these problems in order to find appropriate solutions.

2.2.5. Discussion/Conclusion

This study conducts a systematic literature review of articles published in English until 2020 in the Web of Science database on the social impact of research. To the authors' knowledge there are theoretical developments on the subject, but there is no systematic literature review on the social impact of research in all fields of study. A total of 59 articles were carefully selected to review their content in detail. The aim is to highlight the key factors that enable research to generate social benefits, describe the tools and methods used to measure social impact, specify the limitations that researchers/reviewers encounter when measuring social impact, and identify research gaps.

The article analyses a very recent subject, the last decade can be considered as a turning point and evolution, since practically all scientific production has been produced since 2011. This fact is motivated by the incorporation of social criteria in funding calls, creating the need for researchers to achieve social objectives with their work. These social criteria help to raise awareness (Cunha et al., 2012). The social impact pathways proposed by Muhonen, Benneworth and Olmos-Peñuela (2020) can complement those proposed in Horizon Europe, which are more general in nature. Bornmann and Marx's (2014) proposal for an evaluation report by researchers would make it easier for reviewers, as they are used to writing about their research, and it would be less effort to produce such a report verifying impacts. Similarly, it would be positive to reward researchers who are actively engaged in producing benefits for society (Van der Weijden, Verbree and Van Den Besselaar, 2012).

Although this is a study that does not focus on a specific area, but aims to analyse the social impact of all areas of research, Social Sciences and Humanities stands out as the area with the highest scientific production. This area is characterised by the study of the human being as a social entity, which may be the

reason why this type of research stands out. Knowledge is difficult to measure in social contexts (Lima and Wood, 2014). Research should be perfectly focused on generating social benefits and improving people's lives, considering the opinion of society (Pejić-Bach et al., 2020; Sordé et al., 2020). Researchers have a moral obligation to demonstrate the social value of their research, they must be mindful of doing science with society and not just for it (Sordé et al., 2020). Citizens must be empowered to participate in the different research processes (Fotaki, 2020), moving towards co-creation (Redondo-Sama et al., 2020). Because it has already been shown that involving stakeholders from the beginning of the project increases the success of the project and the likelihood of achieving social impact (Eschenbach, 2017).

The analysis detects a majority of empirical studies that primarily seek to assess the social impact of research, but the lack of a standardised framework, the criticism of the indicators used and the problems detected in this evaluation make this task complex (Spaapen and Van Drooge, 2011; Bornmann, 2014; Esko and Miettinen, 2019). There is no doubt about the need for improvement of the current systems (Lauronen, 2020), in order to obtain a reliable and valid system (Bornmann, 2014). There are phenomena, such as social impact, that quantitative indicators cannot show (Lauronen, 2020), which is why we consider qualitative methods the best option for measuring the social impact of research. The development of such methodologies will increase the visibility of how science can be at the service of citizens (Sordé, et al., 2020). The communicative methodology linked to the field of social impact of research may be a suitable option (Redondo-Sama et al., 2020). It would also be possible to develop a joint social and scientific impact framework (Bornmann, 2012; Bornmann, 2013; Bornmann, 2014; Ram and Shalini, 2018). The development of such a framework would help raise awareness among researchers, breaking the classical thinking of research for scientific output (Lima and Wood, 2014), encouraging the need to make the social impact of their research visible

(Lauronen, 2020) and improving engagement with society (Olmos-Peñuela, Castro-Martínez and d'Este, 2014).

Alternative metrics based on social media, which appear in numerous publications, have proven to be a tool for obtaining indications of social engagement or as a system to measure the popularity of researchers (Lauronen, 2020), but generally do not reveal the impact of research on society (Tahamtan and Bornmann, 2020), as they have not yet been shown to be able to detect the social benefit of research (Sedighi, 2020). Being mainly based on citation counts does not capture the process of researcher-citizen interaction (Álvarez-Bornstein and Montesi, 2019), so this system is not accepted by academics (Jamali and Alimohammadi, 2015), and is even linked to the loss of scientific rigour (Bornmann, 2013). Therefore, these metrics have to solve several problems in order to be used effectively (De Silva and Vance, 2017).

2.3. Scientific research in tourism

Tourism represents a complex social phenomenon that harbors multiple sectors and agents, with great interest for a wide variety of research in the field of Social Sciences (Correia and Kozak, 2010). Since the nineteenth century, traces of tourism studies can be traced in non-academic sources, such as articles in prominent newspapers like The Times or The Nation (Butler, 2015). However, the rigorous scientific approach to tourism was not consolidated until the 1920s, when the first scientific articles on the subject emerged (Gil, Korstanje and Peral, 2020).

D. degrees in tourism appeared in the 1950s (Darbellay and Stock, 2012) but the scientific maturity of the field of tourism and its rapid development began to emerge in the 1970s (Graburn and Jafari, 1991). What was once considered a secondary or marginal topic evolved into a distinct and vital discipline of study (Zhao & Ritchie 2007; McKercher and Prideaux, 2014). The number of specialized journals increases, from less than 10 titles before 1980 to the 135 that are part of the tourism category in the 2022 Journal Citation Reports (McKercher and Tung, 2015). For Tribe (1997) this research was

classified into business-related and non-business-related studies.

Tourism research has been enriched mainly from Social Science perspectives (Towner, 1988), encompassing disciplines such as anthropology, sociology, psychology, geography, economics, history, financial management, political science, human resources, sport and leisure (Butler, 2015; McKercher and Tung, 2015; Gil, Korstanje and Peral, 2020). This multidisciplinary approach has shed light on diverse aspects of tourism, from the behavior of tourists to the economic and political dynamics that underpin it.

However, tourism research faces certain limitations due to its interdisciplinary nature and the lack of effective interaction between the different stakeholders, which can lead to certain assumptions or biases in the results (Tribe, 2004). In its early days, tourism research focused primarily on recording the quantitative expansion of tourism activity, neglecting the more complex social and cultural processes involved (Franklin and Crang, 2001). These early approaches were predominantly descriptive, limited to documenting real-world events (Butler, 2015). Over time, changes have been experienced in the approach and methodologies used in research (Xiao and Smith, 2006).

Tourism research has developed in several areas, with four main branches standing out: the proposal of innovative methodologies to understand the phenomenon, the development of methods applicable to research, the evolution towards new tourism practices, and the creation of novel approaches to tourism education and learning (Chambers, 2007).

Numerous studies have focused on examining the most researched topics in the field of tourism. For example, Ballantyne, Packer and Axelsen (2009) conducted an analysis of publications in international tourism journals between 1994 and 2004, revealing that studies on tourists/visitors, tourism planning, destinations and marketing accounted for more

than a third of the total. Other studies, such as that of Sáez and Fuentes (2010) on tourism in Spain between 1998 and 2009, identified keywords such as "Rural Tourism," "Sustainable development," and "Trends" as the most used. Marfil and Valiente (2013), on the other hand, grouped tourism research in Catalonia during the period 2000-2010 into topics such as tourism heritage, tourism policy, tourism economics and the social environment, highlighting the sociology of tourism and topics such as vacation behavior, sociological impact and youth tourism.

Currently, tourism research has challenges related to the need to keep up with rapid technological transformations and new ways of traveling, especially after the COVID-19 pandemic (Liutikas, 2023). In the future, scientific research in tourism is likely to focus on areas such as artificial intelligence applied to tourism data analysis, congestion management in popular destinations, climate change adaptation, and the promotion of inclusive and accessible tourism (Assaf, Kock and Tsionas, 2022). But it will be crucial that tourism research takes into consideration all tourism stakeholders and focuses on identifying relevant social problems, so that research becomes a tool to address and solve those problems. It should move away from the mere goal of producing articles to increase the academic achievements of the researcher and, instead, focus on the relevance of the results for the resolution of specific tourism problems. In turn, the growth of tourism should go hand in hand with the development of research in this area, encouraging deeper and more rigorous analysis to understand and address the complex and diverse aspects related to tourism activity. Although Butler (2012) argues that industry (or government) should be responsible for leveraging sound academic research on tourism, I believe it is important to change our thinking. Researchers should take responsibility not only for conducting the research, but also for ensuring that the knowledge is properly transferred.

2.3.1. Tourism impact VS social impact of tourism research

Tourism triggers an impact that is global in scope. According to estimates by the World Tourism Organization (UNWTO) in 2018, international tourist arrivals increased by 5%, reaching 1.4 billion tourists. In addition, tourism export revenues experienced a 4% increase, totaling US$1.7 trillion. This tourism growth has led to revenues from visitor spending outpacing the growth of the global economy (UNWTO, 2019).

Throughout history, several authors have examined the impact of tourism. For example, Ap and Crompton (1998) identified 35 impacts of tourism after conducting personal interviews and reviewing the literature. These impacts were classified into three categories: economic impact, environmental impact and social impact, and in turn, into positive and negative impacts. Subsequently, Deery, Jago and Fredline (2012) expanded these categories to 14, identifying a total of 40 impacts in their literature review. These categories included economic benefits, opportunity costs, facility maintenance, interesting activities, disruption, pride, criminal behavior, environment, window dressing, price increases, denied access, fairness, new infrastructure, and local/regional character.

The following sections will identify the economic, environmental and social impact of tourism activities in order to differentiate these concepts from the social impact of tourism research.

A) Economic impact of tourism

The economic impact of tourism generally brings benefits that are well received by residents, especially in economically depressed areas. The economic well-being derived from tourism becomes the most influential factor in the perception of residents towards this activity (Gursoy, Jurowski and Uysal, 2002). The economic dependence generated leads the local population to see tourism activity as beneficial (Allen, Hafer, Long and Perdue, 1993). Tourism development leads to the

creation of numerous jobs, thus boosting the local economy (Prentice, 1993).

In some third world countries, tourism has been seen as a tool to reduce the economic gap with developed countries (Liu and Yen, 2010). Tourism is also a way to boost the local economy and increase tax revenues (Archer, Cooper and Ruhanen, 2015). Tourism development also stimulates private investment, both domestic and foreign, injecting capital into the destination and promoting economic development (Seetanah, 2011).

On the other hand, job creation in the tourism sector does not always imply high quality jobs, which can generate a negative perception of tourism among residents (Jurowski, Daniels and Pennington-Gray, 2006; Tosun, 2002). Moreover, a decline in tourism can have a devastating impact on economies that rely heavily on this sector (Diedrich & Garcia-Buades, 2009), as evidenced during the coronavirus crisis in 2020.

The increase in prices and standard of living associated with tourism can lead to rejection among the local population, especially if residents' wages do not increase accordingly (Tsundoda & Mendlinger, 2009). To measure the economic impact of tourism, various methods such as input-output tables (Fletcher, 1989; Archer, Fletcher, 1996; Heng & Low, 1990; Pratt, 2015), the conventional augmented Solow growth model (Seetanah, 2011) or GDP per capita in constant prices (Ivanov and Webster, 2007) have been used to assess how tourism activity affects different economies around the world.

B) Environmental impact of tourism

The growing interest in tourism in natural areas has highlighted the impact that this activity has on the environment. Environmental protection is fundamental to the continued development of tourism in such areas (Liu, Sheldon and Var, 1987). However, there are two perspectives on this issue: one sees tourism as an opportunity for environmental rehabilitation, while the other sees it as a threat to the conservation and preservation of nature.

Tourism has contributed to the enhancement of natural areas that previously went unnoticed. An example of this is the pirate wrecks in the Bahamas Islands, which attract large numbers of tourists because of their history (Cohen, 1978). Tourism can also be a catalyst for the recovery of natural heritage, collaborating in the creation and protection of natural parks (Andereck, 1995). This activity has also contributed to generate greater environmental awareness in some destinations (Diedrich and Garcia-Buades, 2009). An example of this is the Tortuguero Natural Park in Costa Rica, whose economy is centered on ecotourism and, therefore, its conservation is essential to maintain this type of tourism (Place, 1991). Conservation of the environment as a tourist attraction also avoids logging and deforestation of natural areas (Farrell and Runyan, 1991) and recognizes the importance of saving historic buildings and restoring them to their original value (Liu, Sheldon and Var, 1987).

However, tourism can also have negative environmental impacts. The construction of tourist infrastructures can cause transformations and loss of attractiveness in certain places, especially if carried out in a massive and irresponsible manner (Cohen, 1978). Excessive tourism exploitation can lead to devastating degradation of areas, especially when the carrying capacity of ecosystems is exceeded (Farrell and Runyan, 1991). This has been observed in the Caribbean, where environmental degradation has affected beaches, reefs and marine species due to tourism (Holder, 1988).

Also, tourism can be a significant source of environmental pollution pollution pollution (Thanvisitthpon, 2016). The main means of transport chosen by 58% of tourists in 2018 has been the airplane (UNWTO, 2019), being the most polluting means and generating in that year a total of 747 million tons of CO2 in passenger transport (Marzo Carpio, 2020).

In addition to air transport, the widespread use of automobiles in European tourist destinations also contributes to the generation of greenhouse gases and air pollution. This air pollution also produces acid rain that destroys natural and

cultural heritage, such as those developed in the Black Forest in Germany (Holden, 2016). The overexploitation of natural areas causes water pollution, or in some cases the destruction of rivers and wetlands with the loss of species of flora and fauna (Andereck, 1995). For example, the discharge of wastewater from ski resorts can contaminate rivers and marshes, negatively affecting local flora and fauna (Rodriguez, 1987). In addition, tourism produces solid waste that can overload recycling systems and result in the accumulation of waste beyond their capacity (Mateu-Sbert, Ricci-Cabello, Villalonga-Olives, & Cabeza-Irigoyen, 2013).

To address these challenges, some suggested strategies include the adoption of a controlled, regulated and planned approach to tourism, avoiding overcrowding and irresponsible development that may harm the environment (Andereck et al., 2005). Measures such as the implementation of a tourism tax to compensate for the environmental damage caused by tourism activities are also proposed (Andereck et al., 2005).

The environmental impact of tourism is influenced by key factors, such as the intensity of site use and development, ecosystem resilience, time perspective, and the transformative nature of tourism development (Cohen, 1978). Each destination has its particularities, which means that the environmental impact of tourism can be both positive and negative, and it is crucial to take these factors into account when planning sustainable tourism development.

C) Social impact of tourism

The social impact of tourism focuses on the relationship between tourists and residents, and the opinion of the latter is crucial in identifying this impact. The perception of the social impact of tourism can be influenced by the resident's proximity to the tourist area (Belisle and Hoy, 1980), their attachment to the local community (Um and Crompton, 1987) and even their socio-economic status (Allen, Hafer, Long and Perdue, 1993; Prentice, 1993).

In general, residents' perceptions of tourism tend to be positive, as they see opportunities in tourism development (Belisle and Hoy, 1980). Satisfaction with various living conditions tends to increase as this perception improves (Kim, Uysal and Sirgy, 2013). Tourism can have a significant impact on the lives of residents, changing their behavior and lifestyle, values, and personal relationships (Andereck, Valentine, Knopf, and Vogt, 2005; Kousis, 1989). This interaction can be beneficial as it fosters mutual learning (Tsundoda and Mendlinger, 2009).

Tourism development also leads to the creation and improvement of infrastructure, which is positively valued by residents (Yen and Kerstetter, 2008). This allows local communities to enjoy new recreational activities and amenities, such as restaurants, museums, festivals, and cultural attractions, which might not otherwise exist (Gursoy et al., 2002; Wang and Pfister, 2008; Williams and Lawson, 2001). Tourism has even proven to be an effective measure to prevent depopulation in mountainous and rural areas, as observed in the North Pennines of England (Prentice, 1993).

The act of traveling also allows visitors to better understand the way of life of other communities, which increases tolerance towards other cultures and helps to eliminate racist attitudes. Tourist interest in learning about and visiting certain places can also generate a sense of pride among residents in their rich cultural heritage (Woosnam, Norman and Ying, 2009).

However, tourism can also have negative social consequences. Residents may experience a decrease in their quality of life due to problems such as traffic congestion (Sheldon and Var, 1984), price increases in commodities such as food and housing (Belisle and Hoy, 1980; Duffield, 1982), prostitution, crime and drug trafficking (Crotts and Holland, 1993; Andereck, Valentine, Knopf and Vogt, 2005). In addition, excessive tourism can lead to the deterioration of traditional culture and the loss of a sense of belonging among local citizens (Pearce, 1995).

In recent years, a phenomenon of "overtourism" or "tourismphobia" has been observed, where the negative impacts of tourism have led to a rejection by residents towards tourist activity in certain destinations (Koens, Postma and Papp, 2018; Milano, Novelli and Cheer, 2019a). This area of study, although relatively novel, has historical roots, as attested by a 1971 publication documenting the local population's rejection of tourism in Waikiki (Hawaii), expressed by airport banners reading "Please Don't Visit Hawaii Until We Can Save What's Left!" (Kent, 1971). This situation has been especially evident in cities such as Barcelona and Venice, where the massive increase in tourists has generated social tensions and movements seeking a more sustainable and responsible management of tourism (Milano, Novelli and Cheer, 2019b; Seraphin, Sheeran and Pilato, 2018).

A considerable part of the pernicious consequences of tourism derives from the excessive growth that this activity has experienced throughout history (Higgins-Desbiolles, 2018), a period in which the pursuit of economic profit has prevailed over the welfare of society. It is imperative to abandon this paradigm and direct efforts towards research in this area, proposing approaches that allow planning the evolution and development of tourism in a sustainable manner, in order to continue to take advantage of the benefits previously mentioned, while avoiding possible adverse effects.

D) Conceptual clarification "social impact of tourism" and "social impact of tourism research"

The terms "social impact of tourism" and "social impact of tourism research" can lead to confusion. It is important to differentiate between the two concepts. When we talk about the social impact of tourism, we are referring to the positive or negative effects that tourism activity has generated in the local population at a specific time. On the other hand, the "social impact of tourism research" refers to a type of previous research that, when published and transferred to society, has generated benefits for the population. In this context, research is conducted with a plan developed in advance, based on

the assumption that it should generate only benefits and mitigate adverse impacts. Anticipation, planning, follow-up, monitoring, supervision and adaptive management during all stages of the research are essential (Vanclay et al., 2015).

Therefore, the social impact of tourism research is a less studied and evaluated topic compared to the impact of the activity. The absence of initiatives that establish a clear and defined framework for identifying the social benefits to be achieved through tourism is evident, making it difficult to effectively guide and direct research toward achieving these objectives. The lack of an entity or body to describe and define the societal benefits to be sought through tourism research limits the ability of researchers to focus their efforts on societally relevant aspects. As a result, tourism research may not be contributing optimally to the social welfare and improved quality of life of the communities involved. It is essential to recognize the importance of evaluating the social impact of tourism research. By establishing a clear structure for defining social objectives and measuring results, opportunities for improvement can be identified and the positive impact of tourism on society can be maximized. A dedicated body to guide and oversee research in this field could trigger significant advances in understanding how tourism can benefit local communities, foster social sustainability and promote responsible practices within the tourism industry.

3. EVALUATION OF THE SOCIAL IMPACT OF RESEARCH

This thesis chapter develops the topic of the evaluation of the social impact of research. According to Vanclay et al. (2015), it stands as a process of analysis and inquiry that aims to influence decision making and management of aspects of a social nature, while comprising the monitoring and management of the social aftermath resulting from planned interventions, as well as any resulting social change (Vanclay, 2003). It constitutes a learning process that encompasses the understanding of dilemmas, the analysis and evaluation of potential impact pathways, the development of strategies, the formulation and implementation of a follow-up program (McCombes, Vanclay and Evers, 2015). This approach gives research entities the ability to monitor and manage their performance, legitimizes the investment of public resources in research, establishes a criterion for allocating future funding, and facilitates the apprehension of the most effective methods to produce impact (Penfield, Baker, Scoble, & Wykes, 2014).

3.1. Evaluating the social impact of tourism research in social media

Within the theoretical framework defined in Chapter 2, a detailed exploration of various perspectives and approaches to the evaluation of the social impact of research activity is highlighted. This section delves into the alternative metrics approach as a preeminent means of evaluation, the prevalence of which is attributed to its widespread adoption and recognition in current academic and scientific circles.

The selection of this method is motivated not only by the multitude of publications that develop it, but also by its holistic nature and its ability to encompass multiple and sometimes elusive dimensions of research impact. These alternative metrics, often drawn from digital sources and online platforms, capture not only traditional academic influence, but also resonance in the public sphere, media reach, interaction in social networks, and other quantitative and qualitative indicators that account for the relevance and dissemination of scientific findings. However, their application entails

methodological challenges and inherent limitations. Accurate interpretation of these metrics requires a nuanced understanding of their context and the behavioral patterns of online audiences. The following is article 2, which discusses the application of this approach in the field of research related to the tourism industry.

Article 2: Alternative metrics for assessing the social impact of tourism research

Viana Lora, A., & Nel-lo Andreu, M. G. (2020). Alternative metrics for assessing the social impact of tourism research. *Sustainability, 12*(10), 4299. DOI: 10.3390/su12104299

Abstract: Alternative metrics are increasingly used to measure the social impact of research. This article seeks to analyze the social impact of research in the field of tourism. For this purpose, we will determine the extent to which the articles in this field reach society by examining the scores they achieve on social media and studying the correlation between scientific impact and social impact. Altmetric information will be used for data extraction and analysis. The results show a low correlation between citations and the Altmetric Attention Score (AAS), as well as a presence that is not captured by most publications in the field of study. Interestingly, publications with higher AAS are concentrated in the same journals. The article concludes by determining that alternative metrics can be used to compliment academic impact but cannot be a substitute for it. Further progress is needed in the development of a framework that unifies both impacts.

Keywords: social impact of research; impact assessment; social media; altmetric; tourism

3.1.1. Introduction

Social impact is gaining strength in funding calls and in research in general (Holbrook and Frodeman, 2011; Molas-Gallart, 2015; Muhonen, Benneworth and Olmos-Peñuela, 2020). This is due, on the one hand, to the fact that there are complex social problems that require science to be understood (Esko and Miettinen, 2019). On the other hand, it is

due to the fact that entities that finance science seek results that show evidence, visualizing research as an investment that should benefit society (Tonetti, 2019). This is a way to improve the relevance of research (Rau, Goggins and Fahy, 2018). There are calls for proposals that already include a section on social impact, as is the case when dealing with vulnerable populations, and benefits must be demonstrated in order to obtain funding (Gomez et al., 2019).

The aim of strengthening the social impact of research is to take into account not only scientific articles, but also the changes and improvements that can be produced in society (Todelo, 2018), going beyond academic impact. However, it is a reality that researchers have to mitigate with the need to demonstrate high scientific impact. Fulfilling both objectives becomes complex, since sometimes the fulfilment of one implies the renunciation of the other. This occurs when you decide to publish your study in a journal in order to reach a wider part of society, thereby renouncing publication in a high impact journal. These objectives also come into conflict when the needs to collaborate for common benefit or competition for funding are considered (Doyle, 2018).

Social impact is such a complex phenomenon that prediction would be impossible without a framework analysis to help organize and focus research (Branch, 2018). However, evaluation is complex because the systems are either non-existent or very costly (Esko and Miettinen, 2019) and are mainly based on conventional methods such as local surveys, secondary data analysis or key informant interviews (Sherren et al., 2017). For this reason, it is necessary to continue advancing and developing methodologies that are able to measure them. Approaches that combine scientific and social impact assessment under one applicable framework are needed. This study aims to test the Altmetric tool to determine whether it can be used as an additional methodology or an instrument to be incorporated into social impact assessment. Altmetric collects and analyses information from scientific

publications on social media and creates a score based on the scope of the research (Davies, 2015).

This article is original because there is no study that seeks to measure social impact using the Altmetric tool in the field of tourism. Therefore, this article aims to carry out analysis with alternative metrics that measure the social impact of research in tourism and to answer the following research questions (RQ):

RQ1: What is the presence rate of the tourism articles with the greatest impact (Journal Citation Reports (JCR) Q1 and Scopus Q1) in Altmetric? What is the status of the Altmetric Attention Score for tourism items with the greatest impact (JCR Q1 and Scopus Q1)?

RQ2: Is there a significant statistical relationship between the citation index of the tourism items with the greatest impact (JCR Q1 and Scopus Q1) and the Altmetric Attention Score?

RQ3: Which articles and journals in the field of tourism have the highest Altmetric Attention Score?

RQ4: Could the impact measured by Altmetric complement or replace traditional bibliometrics in the future?

The document will be organized as follows. Section 2 contains a review of the literature on the social impact of research and alternative metrics to scientific impact. Section 3 explains the methodology and methods used to extract information. Data analysis and results are shown in Section 4. Section 5 presents the study's conclusions and future research.

3.1.2. Literature Review

Social Impact of Tourism Research

The social impact of research is understood as the changes in behavior that have occurred due to specific research (Spaapen and Van Drooge, 2011). These behavioral changes, which are consequences suffered by the population, are caused by public or private actions that alter their daily lives (Burdge et al., 1995). For Vanclay (2002;2003), social impact reflects the changes experienced by humans within their way

of life, culture, community, political systems, environment, health and well-being, personal and property rights, and fears and aspirations.

Flecha (2018) determines that social impact occurs when scientific knowledge that has been produced, published, and transferred to society and its institutions has a positive effect on change. If this knowledge is not shared, despite the fact that we are certain the results would have an impact, we would be talking about potential social impact (Pulido et al., 2018).

The definition of the social impact of research provided by Reale et al. (2018) relates to the translation of research results into policies that produce improvements in society. This conceptualization provokes a reflection between the relationship of impact and the application of research to problems previously defined by political actors. However, science must take into account real social problems when proposing research, avoiding being influenced by political interests (Mills, Massoumi and Miller, 2019) and seeking commitment to social improvement as a basis for research.

A new model for an interactive approach based on the relationship between researchers and stakeholders has been developed in response to this need, changing the traditional model in which science was only a source of knowledge flowing into society (Esko and Tuunainen, 2019). This model encourages the participation of all stakeholders, requiring them to recognize, value and raise their interests while their involvement is necessary (Nguyen et al., 2019). This interaction, at the same time, is a way of promoting the social impact of research (Álvarez-Bornstein and Montesi, 2019), since social problems are considered in advance. It is a way of visualizing what we want to change in the system in order to alter it (Glover, 2015).

There are research projects that incorporate tools designed to involve society in science. An example is RRI (Responsible Research and Innovation), which engages local stakeholders and researchers in a constructive discussion that helps to

identify responsible strategies and improve the impact of research (Tricarico et al., 2020).

The participation of all agents involved is fundamental for sustainable development. One option is to propose research in compliance with one of the 17 United Nations Sustainable Development Goals (SDGs). In this way, science translates these goals into practical agendas while promoting sustainability. The multidisciplinary approach to sustainability requires the merging of different disciplines to solve society's problems (Salvia et al., 2019). In 2002, the United Nations Environment Programme (UNEP) underscored the need to emphasize social impacts (International Institute for Sustainable Development (IISD), n.d.), since the social factor is one of the pillars of sustainable development (Cuthill, 2010).

Studying the social impact of research in tourism deserves special attention because it is one of the most important sectors in the world. According to the World Tourism Organization (UNWTO) (2015), tourism contributes to the achievement of the SDGs through various actions such as reinvesting profits in health care, investing in education and integrating women into the labor market. The social benefits produced by tourism, such as preserving local culture or restoring historical buildings, increasing parks and recreational areas and improving transport infrastructure and other public facilities (Gursoy and Rutherford, 2004), are another reason for promoting research in this field.

The scientific impact of this area has a recognized historical evolution and has been gaining importance over the years. This impact, as measured by bibliometrics, has traditionally been based on publication citations to measure quality (Butler et al., 2017). In the JCR 2018 ranking, the category Hospitality, Leisure, Sport and Tourism ranked 98th out of 236 in average impact factor (Clarivate Analytics, n.d.). The social impact of tourism research, however, has not received the same interest as the scientific impact. This is due to the consideration of scientific impact as the only useful tool for measuring research,

since it was assumed that high-level research could offer greater benefit to society (Bornmann, 2013).

Alternative Metrics and Its Relationship With Social Impact

The digital revolution is an opportunity in the field of research, allowing researchers to participate and share their knowledge about studies and results (Chen et al., 2020), while enabling people to access science more easily.

Social networks have become one of the main communication channels for involving different stakeholders (Manetti and Bellucci, 2016). All the actors involved in the process can access the network and interact to develop valuable knowledge for society, improving the probability of producing a social impact (De Jong et al., 2014). Social networks provide a critical amount of data that enables the creation of solid databases for researchers (Barros et al., 2018) and increase the scope of scientific production beyond the academic community (Travieso-Rodríguez and Araújo, 2018); it is a way to increase public attention to science.

The publication of results on networks allows the rapid dissemination of research and can call attention to other academics who generate knowledge on the subject (De Silva and Vance, 2017) or detect social problems that need broader research for their solution. Thanks to this digital evolution, alternative metrics to the impact factor were developed, known as "altmetrics", which are based on the number of times an article is mentioned, commented on and/or shared on the Web (Priem and Hemminger, 2010). This is a new way of measuring the social impact of research, where it follows that an article that has received a lot of attention online may have produced an impact on society (Jamali and Alimohammadi, 2015). Social impact assessment will, therefore, be based on the analysis of interactions between social media and academia (Lyu and Costas, 2020).

Pulido et al. (2020) demonstrates the visibility of the social impact of the research on well-being using social networks by

analyzing 1402 tweets and 157 Facebook posts from 10 well-being projects.

Among the alternative metrics we find the Altmetric tool, which has been used in this article because the data it provides allow us to evaluate which documents have an impact on society. In this way, Altmetric plays an important role in processing data to evaluate the social impact of research (Garcovich and Adobes Martin, 2020). In Altmetric, data are measured in real time and instantly after publication, it is open, fast, applied to non-traditional formats and multiple sources and is easy to use (Alonso, Cordón-García and Maltrás, 2016). Unlike other social network analysis tools, Altmetric cleans and standardizes the data collected by extracting a maximum of one citation per person/source (Delli et al., 2017). Analyzing only Facebook and Twitter can be considered weak as we cannot prove the relationship of influence in a heavily commented publication; extending the analysis to the content of blogs and media, as is done by Altmetric, makes the study more consistent (Timilsina et al., 2017).

Quantitative metrics are gaining weight in the evaluation of the social impact of research due to the easy collection, transparency of the analysis process and the fact that the information extracted can be quickly verified and used for comparative studies (De Silva and Vance, 2017). There are some quantitative indicators that have been created to measure this impact, such as those designed by the European Commission to monitor and evaluate the research they fund, some of which are quotes or mentions in the midst of debate, the number of participants in public conferences or the new policies developed (Besselaar, Flecha and Radauer, 2018). Horizon 2020 also includes start-ups, prototypes or patents created within these indicators (European Commission, 2015a). Smith (2001) described some indicators, such as citations of scientific publications in policy documents, textbooks or teaching materials, which could be used for assessing the social impact of research.

To measure the social impact of the research on social media, the indicator developed by Altmetric can be used, based on the Altmetric Attention Score (AAS), which is calculated with an automatic algorithm which considers the volume, source and author of information extracted from Twitter, Facebook, Google+, policy documents, mainstream media, blogs, Mendeley, CiteULike, PubPeer, Publons, Reddit, Wikipedia, sites running Stack Exchange (Q&A), reviews on F1000, and YouTube. The Altmetric graphic, shown in Figure 6, is represented by a colored doughnut with the weighted score in the center. Each color reflects the source of information used (Davies, 2015). There are several ways to access Altmetric information. In this study we used the Dimensions database, which is free on request for researchers. Both tools are owned by the same company, Digital Science.

Figure 6: The doughnut and Altmetric Attention Score (AAS).

Recent studies see Altmetric as a new tool for assessing the social impact of research; Sedighi's study (2020) measures the social impact of research in 1738 articles in two scientometric journals over five years. Its low correlation index with respect to scientific impact determines the use of this tool as a complementary one, a conclusion also adopted by Garcovich and Adobes Martin (2020), after demonstrating the low correlation between the JCR citation and the AAS in a total of 1080 publications from four journals in the field of pediatric dentistry from 2014 to 2017. It does allow a better view of the possible social impact of research results on society.

Bornmann et al. (2019) analyzed case studies of the Research Excellence Framework (REF), the body responsible for demonstrating the non-academic impact of UK research, using Altmetric. They compared the AAS with traditional citations from two types of publications: Those sent as case study results and those that have referenced those case studies. The correlation was close to zero or negative in the case studies that present social impact according to REF, so this article highlights the divergence in the construction of social impact that both systems have.

Dardas et al. (2019) established the 100 articles indexed in the Journal Citation Report in the nursing category with the highest activity and discussion in the networks using the AAS. In this study, it was stated that there was no representative difference between the Altmetric scores of articles catalogued in journals of different quartiles, unlike the analysis performed by Delli et al. (2017) of the dental field, in which the AAS was significantly higher in articles from Q2 journals. In this same field of research, Kolahi and Khazaei (2016) used Altmetric to present the 50 articles with the highest AAS. Kolahi and Khazaei (2018) also evaluated the social impact of articles on the topic in PubMed and collected publications from 150 different journals to determine the journal with the highest number of impact publications, the British Dental Journal, stressing the importance of giving visibility to this type of tool.

Cho (2017) analyzed the social impact of Korean research in all fields using Altmetric in 383 articles. She compared it with bibliometrics to highlight a positive correlation between the articles stored in Mendeley and the citations. As research fields, he highlighted the medical sciences with the most presence on Twitter and the social sciences in Mendeley.

As can be seen, there are fields of research that have received numerous studies regarding alternative metrics and the use of Altmetric, as in the case of the dental field. In Tourism, this is a non-existent analysis, which is why this article will analyze data extracted with Altmetric to measure the social impact of

research in this field. The following section explains the methodology used and the process of data extraction.

3.1.3. Materials and Methods

This article presents an applied research using the Dimensions database (app.dimensions.ai), which gathers all of the information from Altmetric. The study sample deals with articles classified within the tourism research category over three years (2017–2019). To extract them, first we accessed Dimensions and filtered by year and by research category and then we downloaded all available publications on 18 March 2020. This was filtered by research category and not by tourism journals to avoid excluding articles that deal directly or indirectly with tourism but have been published in journals catalogued in other fields of study. This tool gathers different information from each publication such as title, DOI, name of journal, date of publication, volume, number, pages, type of publication, authors, affiliation, citations, the AAS and other alternative data. We used this information to design the database in Excel. A filtering was performed again to extract information from the articles with the highest scientific impact. For this purpose, the journal of the first quartile of journals of JCR and Scopus were selected using the Spanish Foundation for Science and Technology (FECYT) database and the Scimago Journal and Country Rank (SJR) for each year of reference. An analysis of the extracted data was made and is explained in the following section.

3.1.4. Results

This section contains findings of the analysis carried out. The extraction of the publications catalogued in the tourism field during the three years of study shows a total of 16,453 publications, but for this research we selected those with the highest scientific impact. For this purpose, the publications framed in JCR Q1 and Scopus Q1 journals were selected: A total of 5307 publications distributed in 65 journals. There were 2123 publications shared at least once on social networks over the three years.

Answering the first question of the research, the presence of tourism articles with the highest scientific impact, catalogued in JCR Q1 and Scopus Q1 journals, during the three years is 40%. In 2018, the highest proportion of articles mentioned at least once on social networks is found to be 45.14%, compared to 43.74% in 2017 and 36.49% in 2019 (Table 2). In absolute terms, we see an increase in the number of tourism publications every year.

Year	Total publication			Publications with the AAS			
	No. of publications	No. of citations	Average citations	No. of publications	% of publications with the AAS	No. of citations	Average citations
2019	2982	7054	2.37	1088	36.49%	3122	2.87
2018	1287	9668	7.51	581	45.14%	4726	8.13
2017	1038	13,830	13.32	454	43.74%	7151	15.75
Total	5307	30,552	5.76	2123	40.00%	14,999	7.07

Table 2: Presence of tourism research publications at Altmetric. Own elaboration.

The average number of citations shows similar results for all articles that have the Altmetric metric and those that do not. Articles with the AAS have an average of 2, 8 and 15 citations per year compared to the average of 2, 7 and 13 citations per year (2017–2019) for articles without Altmetrics. This result shows that there is no significant difference in citation capacity between articles with and without Altmetric (Table 2).

To continue answering question 1, an analysis of the AAS was performed. The maximum score obtained for a tourism article is 707 points in 2019, 381 points in 2018 and 423 points in 2017. The average score is around 8–13 points per article in the period analyzed, but its standard deviation shows the dispersion of values spread over the score range. The mode calculation shows 1 as the most repeated score value for the three years. The median is 2 for the three years, and therefore half of the articles are between 1 and 2 of the AAS (Table 3).

Year	Publications with the AAS	Total AAS	Rank of the AAS	Average of the AAS	Standard deviation	Median
2019	1088	10,458	1–707	9.61	38.76	2
2018	581	4743	1–381	8.16	24.70	2
2017	454	6154	1–423	13.54	43.04	2

Table 3: The status of the AAS in tourism research publications. Own elaboration.

This article presents a correlation analysis to determine whether there is a relationship between the number of citations and the AAS in tourism research, using data extracted using Dimensions and answering question three. The correlation coefficient, although positive in all three years, shows data very close to zero. In 2019 it is 0.1027, in 2018 it is 0.0180, and for 2017 it is 0.0326. To better understand this information, Figure 7 shows the dispersion of these data. The blue, red and green colors show the citations and AAS in 2019, 2018 and 2017, respectively.

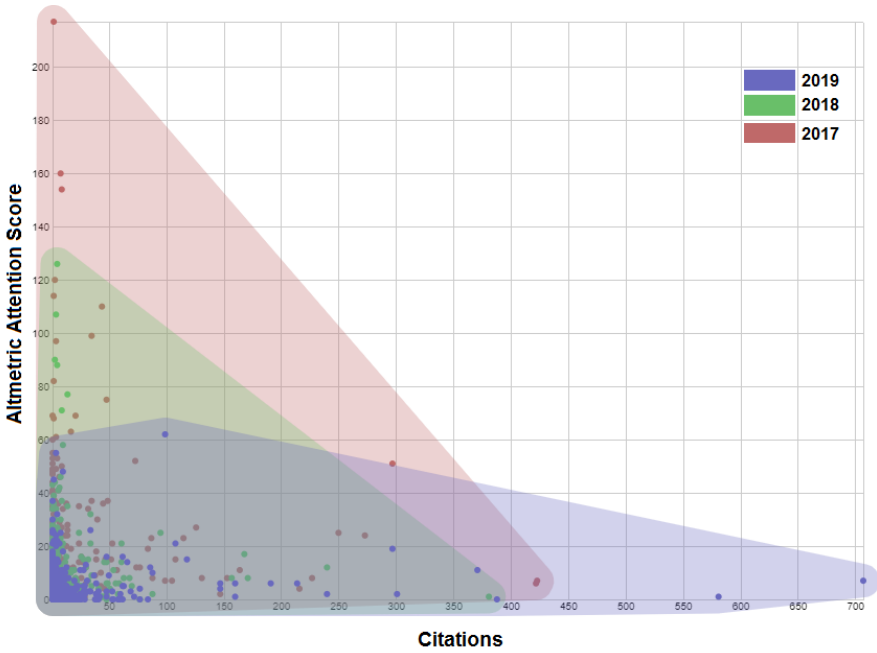

Figure 7: Correlation between the AAS and Citations in tourism research publications. Own elaboration.

To answer question 4 of the research, Table 4 shows the ten research articles in tourism with the highest social impact according to the AAS and Table 5 shows the ten journals with the highest AAS in tourism publications. The article in first position, "Vacation Posts on Facebook: A Model for Incidental Vicarious Travel Consumption", has a score of 707 points with only seven citations. On the other hand, the article in last position, with a score of 297 points, is the most cited in this top ten with 51 citations.

Article title	Authors	Year	The AAS	Citations	Journal title
Vacation Post on Facebook: A Model for Incidental Vicarious Travel Consumption	Marder, Ben; Archer-Brown, Chris; Colliander, Jonas; Lambert, Aliette	2019	707	7	Journal of Travel Research
Turning It Off: Emotions in Digital-Free Travel	Cai, Wenjie; McKenna, Brad; Waizenegger, Lena	2019	581	1	Journal of Travel Research
Keeping the Memory but Not the Possession: Memory Preservation Mitigates Identity Loss from Product Disposition	Winterich, Karen Page; Reczek, Rebecca Walker; Irwin, Julie R.	2017	423	7	Journal of Marketing
Uncertainty Increases the Reliance on Affect in Decisions	Rad, Ali Faraji; Pham, Michel Tuan	2017	422	6	Journal of Consumer Research
Celebrities, air travel, and social norms	Gössling, Stefan	2019	388	0	Annals of Tourism Research
Decreasing vaccine coverage rates lead to increased vulnerability to the importation	Fujita, Dennis Minoru; Salvador, Felipe Scassi; Nali, Luiz Henrique da Silva; Luna,	2018	381	1	Journal of Travel Medicine

of vaccine-preventable diseases in Brazil	Expedito José de Albuquerque				
Autonomous vehicles and the future of urban tourism	Cohen, Scott A.; Hopkins, Debbie	2019	371	11	Annals of Tourism Research
When an Hour Feels Shorter: Future Boundary Tasks Alter Consumption by Contracting Time	Tonietto, Gabriela N; Malkoc, Selin A; Nowlis, Stephen M	2019	301	2	Journal of Consumer Research
Sounds like a healthy retail atmospheric strategy: Effects of ambient music and background noise on food sales	Biswas, Dipayan; Lund, Kaisa; Szocs, Courtney	2019	297	19	Journal of the Academy of Marketing Science
Selling Pain to the Saturated Self	Scott, Rebecca; Cayla, Julien; Cova, Bernard	2017	297	51	Journal of Consumer Research

Table 4: Tourism research publications with the highest AAS. Own elaboration.

The study includes tourism publications from 65 journals classified within JCR Q1 and Scopus Q1. As mentioned above, the filtering was done using tourism as the field of research, which leaves 29 journals that are within the category of tourism in the JCR and Scopus rankings and 36 journals that belong to other categories such as Marketing. Analyzing the publications with the AAS, one journal in the category of tourism and 13 in other categories disappear, that is, there are 14 journals of high academic impact whose tourism publications have not presented any social impact in social media. Of the 51 total journals that present an AAS in some articles, Table 5 includes the ten with the highest score. The ten articles in Table 4 are concentrated in six journals, which also appear within the ten journals with the highest AAS.

Journal	Total AAS	Nº of publications with the AAS
Journal of Consumer Research	6002	147
Journal of Marketing	1944	62
Journal of Travel Research	1771	90
Journal of Sustainable Tourism	1695	185
Journal of the Academy of Marketing Science	1342	109
Annals of Tourism Research	1323	137
Annals of Leisure Research	859	190
Journal of Travel Medicine	828	82
Current Issues in Tourism	683	123
International Journal of Contemporary Hospitality Management	625	90

Table 5: Journals with more AAS in tourism research publications. Own elaboration.

The provenance of the authors of tourism publications with AAS is another interesting aspect to analyze because it can be linked to the effort of governments to reflect the social impact of the funded research. In fact, the three countries highlighted in this study are countries with programs that seek evidence of the social impact of research. This is the case of the National Science Foundation in the United States, the Research Excellence Framework (REF) in the United Kingdom and the Engagement and Impact Assessment (EI) in Australia (Flecha, 2018).

With the results obtained and in response to question five, Altmetric metrics are considered complementary, providing additional information on research and its social impact on social networks, but not as a replacement for traditional metrics. It is a useful tool which provides immediate insights into scientific research in social media but does not have a valid system to replace the traditional method of scientific impact.

3.1.5. Discussion

This is the first study to use the Altmetric tool in tourism research to measure the extent of the social impact of tourism research. The article tries to verify whether there is a direct relationship

between scientific impact and social impact of the research. The Altmetric scores were analyzed and the most relevant articles and journals at a social level in tourism were highlighted. This section contains the conclusions obtained from this research. When using the Altmetric tool, this research has found a limitation in the absence of the analysis of ResearchGate, an academic social network used to give visibility to research.

If the tendency to use social networks as a means of generating a social impact of the research were to increase, a greater proportion of tourism articles present in the last year should be reflected and this is not the case. If it is true that the articles with the highest score are found in the last year, this is due to the fact that the articles appearing in social networks generate more conversation in recent times, perhaps because the intervention of the non-academic public extends the circle of impact.

The fact that the most repeated score value is one may be due to the fact that this mention in the social network has been produced by the author or the journal. In spite of having a mention in the social networks, these investigations lack social impact since they have not had much reach. The calculation of the median establishes that half of the articles analyzed have an AAS around 2 points; we are talking about a large number of articles with little social impact. On the contrary, the articles with the highest score obtained in Altmetric are concentrated in certain journals, as can be seen in Table 4, which are also the journals that obtain the highest score for the total set in this study, reinforcing Tonetti's theory (2019), which proposes that journals should be responsible for the social dissemination of articles with scientific quality. Another fact to bear in mind when dealing with high scores is whether this score is due to negative comments; therefore, an analysis of the content of each publication in social media would need to be carried out. The AAS can be considered more as a measure of influence than quality (Mullins, Boyd and Corey, 2020).

There was no significant correlation between the citation index and the Altmetric score. The highest correlation was found in 2019, which would support the theory of the increased use of social media for research sharing. It should be borne in mind that the scientific impact of an article may increase over the years, with more and more citations accumulating, whereas this is unlikely to be the case with a publication on social networks in previous years, so the social impact of a particular study would not be very variable over time, except in older articles that have dealt with a very socially relevant topic at present, such as the new coronavirus disease (COVID-19). The correlation would then be higher in 2019 because it has not yet achieved the maximum number of citations but perhaps already has the maximum Altmetric score, these scores being more related now than if we analyzed the same articles a year later. In addition, a close correlation to one could determine more disclosable but not more scientifically interesting articles.

This research is the starting point that highlights the importance of social impact in tourism research. It is an additional instrument to consider, it serves to have greater criteria when developing a policy or prioritizing public or private investment. A future article may define concrete criteria and indicators that favor investments in projects with greater social impact.

It is necessary to develop a methodology that unifies scientific and social impact under a single framework. One opportunity for future research could be studying the relationship between scientifically irrelevant articles and Altmetric data, since in this study only the articles with a high academic impact were selected. This could test whether in some cases social networks pump out information from scientific publications without any academic value.

Another research opportunity is the gap in measuring social impact, since Altmetric does not measure the social impact of the research. This could be addressed by designing and testing a clear, measurable and universal system of indicators that could be applied at all stages of research. At the present time, there are no widely accepted indicators, such as

citations or the H index, that can identify social production. There have not yet been established guidelines for the information to be collected and the monitoring of data (Spaapen and Van Drooge, 2011).

3.2. Framework and indicators for measuring the social impact of tourism research

The use of alternative metrics has proven to be a suggestive indicator of the presence and reach of research activity in social media environments. However, it is imperative to stress that these metrics cannot be conceived as a definitive measure of the intrinsic impact and value of research to society as a whole. Rather, their application must be contextualized within a broader and more holistic paradigm of evaluation, which combines diverse methodological strategies with the aim of achieving a comprehensive and scientifically robust appreciation of the social impact derived from research, thus capturing its diversity and subtlety.

By virtue of this complexity, the present section stands as an evaluation framework designed to interweave alternative metrics with other relevant evaluative instruments. It is not limited only to metrics of influence on digital platforms, but extends towards the incorporation of additional assessment tools, while taking into consideration the various evolutionary stages that characterize the course of a scientific investigation. This structure ensures a more complete and deeper view of how research contributes to society.

The following article presents an advanced, highly nuanced and novel methodological approach, never before used in the field of tourism, which opens the door to a deeper and more rigorous understanding of the social impact of research in its fullness.

Article 3: Advancing a framework for social impact assessment of tourism research

Viana-Lora, A., Nel-lo-Andreu, M. G., & Anton-Clavé, S. (2022). Advancing a framework for social impact assessment of tourism research. *Tourism and Hospitality Research*, 14673584221105007. DOI: 10.1177/14673584221105007

Abstract

This article aims to advance the methodology for assessing the social impact of tourism research. An evaluation framework was designed to measure social impact in three stages—ex-ante, in-itinere and ex-post—and the ex-post evaluation was applied to a tourism research project, the POLITUR project, to test its validity. The collected information originated from interviews and documentary material. The analysis was structured according to six main areas—communication and promotion, policies and regulation, economic benefit, new technological resources, environment and social improvements—and four dimensions—temporal, applied, geographical and sustainability. The results are followed by a discussion of the domains and dimensions of the social impact assessment of tourism research. The need for further improvement in methods for measuring the social impact of tourism research and the importance of research that generates social impact are highlighted.

Keywords: Social impact assessment, Tourism research, Social impact of tourism research, POLITUR project

3.2.1. Introduction

The social impact of scientific research is a complex phenomenon (Lima and Wood, 2014; Lauronen, 2020) because it is diverse in nature (Vanclay, 2002) and generates changes that affect people's quality of life (Burdge et al., 1995). As social impact has become a priority in the academia (Van den Akker et al., 2017), there is an increasing need to demonstrate how research results benefit society at large (Lima and Wood, 20014). However, the evaluation of social impact, understood as "the process of identifying the future

consequences of a current or proposed actions, which are related to individuals, organisations and social macro-systems" (Becker, 2001), is still under development. Evaluation is, in this context, a tool for understanding the societal consequences of scientific research and aids decision-making by managers, funders and society as a whole (Vanclay et al., 2015; Ahmadvand and Karami, 2017). Since funding agencies seek to ensure that funded projects clearly identify societal benefits (Holbrook and Frodeman, 2011) but lack valid measurement systems, it is the researcher's responsibility to demonstrate the social impact of their work (Sordé, et al., 2020) and make it visible (Lauronen, 2020), rather than assume that this communication and impact occur by default (Wilsdon et al., 2015). To this end, social impact can be conceived as a goal to be taken into account at every step of the research process, from beginning to end (Spaapen and Van Drooge, 2011).

The development of tourism activity causes positive and negative impacts that affect various areas (Seetanah, 2011; Andereck, 1995; Milano, Novelli and Cheer, 2019a; Archer, Cooper and Ruhanen, 2012, Yen and Kerstetter, 2008), including, as is well known, the social sphere (Brougham and Butler, 1981; Andereck and Nyaupane, 2011; Andereck, Valentine, Knopf and Vogt, 2005; Kousis, 1989). However, the social impact of tourism and the social impact of tourism research are very different terms that refer to different social, economic, institutional, territorial and environmental dynamics. The social impact of tourism refers to the impacts that tourism activity has generated in society (Deery, Jago and Fredline, 2012), but the social impact of tourism research refers to the effects that tourism research can have when it is published and transferred to society and the benefits it generates in the population (Flecha, 2018). The social impact of tourism has been extensively studied by researchers (Deery, Jago and Fredline, 2012), the literature on the social impact of tourism research is very limited if not practically non-existent. For this reason, this article aims to advance the methodology for assessing the social impact of research in a specific

thematic area, namely tourism. Additionally, in order to test the validity of the proposed evaluation framework, the results of a tourism research project were used as a case study. The case study is considered the best option for showing the validity of the social impact framework (De Jong et al., 2014; Tahamtan and Bornmann, 2020) because it allows researchers to systematise complex information (Bornmann, Haunschild and Marx, 2016). Analyses such as the one proposed in this study contribute to the concept of social impact of research, particularly in the field of tourism, and to the development of an evaluation method that can be widely used by researchers.

To the authors' knowledge, this is the first analysis that seeks to develop and apply a methodology for assessing the social impact of tourism research. This type of study is common in other scientific areas such as the medical sciences, and there have been attempts to design frameworks for analysis such as the Payback Framework, the Research Institute Framework and the Societal Impact Framework (Van der Weijden, Verbree and Van Den Besselaar, 2012). Thus, the paper is also an example of how publicly funded tourism research may contribute to improving people's lives.

The article is structured as follows. Section 2 proposes a conceptual framework for the evaluation of the social impact of research. Section 3 explains the evaluation methodology used in this article. Section 4 draws out the results of the analysis. Section 5 discusses the method in light of the results obtained, and Section 6 presents the conclusions of the research.

3.2.2. Conceptual framework

This article proposes a methodology for assessing the social impact of tourism research and applies it to a selected research project. The design of this methodology is a complex task because of the interdisciplinary nature of social impact (Hill, 2016). Social impact assessment must consider all contributions to the social impact of a research effort (De Jong et al., 2014). Most evaluation systems focus on capturing direct

and immediate impacts but fail to capture indirect and long-term impacts (De Silva and Vance, 2017). This methodology seeks to address this problem. Previous analysis on research's social impact identifies three key moments for assessing the social impact of a research project: ex-ante, in-itinere and ex-post (Flecha, 2018; Kvam, 2018; Redondo-Sama et al., 2020). Additionally, several authors have proposed a number of indicators for this evaluation (Smith, 2001; Cunha et al., 2012; McCombes, Vanclay and Evers, 2015; Van den Besselaar, Flecha and Radauer, 2018; Corsi et al., 2019; Chams et al., 2020).

In this paper, different tools to collect information are applied depending on the moment of evaluation, and four dimensions are considered in order to classify the resulting indicators: applied dimension, temporal dimension, geographical dimension and sustainability dimension. The social impact of research can be of a direct or indirect nature (Alla et al., 2017), which is what it is referred to in this study as the applied dimension. This is determined by whether the impact has been produced by the project's research or by some action related externally to the project. The temporal dimension groups the impact into short-term or long-term, depending on when it occurs. In general, it takes a long time for an impact to occur, so it may be the case that at the time of the evaluation, some impacts do not yet exist (Bornmann, 2012; Sivertsen and Meijer, 2020). The geographical dimension categorizes the impact as either local, when it occurs in the same place where the research was conducted, or extended, when it occurs in a place other than where the research was conducted. The sustainability dimension relates to the impact of a research project on the achievement of the Sustainable Development Goals (SDGs). These goals have similar principles to those found in social impact assessment, based on social protection aspects such as the establishment of basic infrastructure for water, housing, energy, schools and economic development through job creation or support for small businesses (Aucamp and Lombard, 2018). There are tools such as the Social Impact Open Repository (SIOR) that show the social impact of

research results based on the outputs created to address the SDGs (SIOR, 2017). The proposed framework is illustrated in Figure 8.

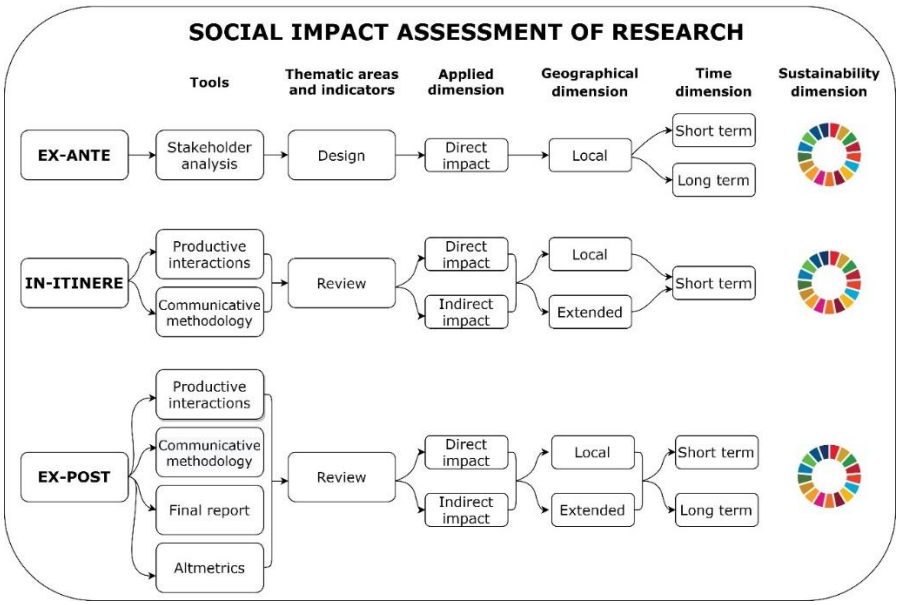

Figure 8: Framework for assessing the social impact of a research project. Own elaboration.

An ex-ante evaluation can be carried out when knowledge from the project has not yet been generated; it determines the potential social impact (Redondo-Sama et al., 2020; Olmos-Peñuela, Castro-Martínez and d'Este, 2014). The ex-ante assessment could be considered a simulation of what would happen if the project were to be developed. A project evaluation that identifies social risks and benefits is considered necessary to manage such risks and benefits throughout the project (Kvam, 2018). Research agencies may request this assessment for project funding, as is the case, for instance, with the National Science Foundation (NSF) in the United States (Boshoff and de Jong, 2020). Such requests increase the need to achieve minimum societal goals (Cunha et al., 2012). For this assessment, some scholars propose the analysis of stakeholders and their involvement from the beginning of the project (Eschenbach, 2017; Bornmann, 2013). Determining stakeholder interests serves to frame the research around

social issues (Lauronen, 2020) and make the design of the thematic areas and indicators relevant to that project. This assessment focuses on direct impacts that can be achieved if the project is implemented. Relevant social data are extracted to serve as a future prediction of how the research will influence society (Kvam, 2018). This prediction will provide answers to what kind of change is expected with the implementation of the project, where this change will occur, what effects it will have and whether this effect is important for society (Helming et al., 2011). The assessment of the project's area of influence categorises the impact as local according to the geographical dimension. As it is a forecast, the time dimension can be either short-term or long-term. Identifying which of the SDGs will be achieved answers the sustainability dimension (Pejić et al., 2020).

Once the project is underway, an in-itinere evaluation can be carried out to mitigate possible deviations and errors (Macombe and Loeillet, 2017; Vanclay et al, 2015) and to incorporate or remove indicators from thematic areas. At this point, an analysis of productive interactions can be proposed. Contact with stakeholders causes them to engage with the research. This is what is called "productive interaction" (Molas-Gallart and Tang, 2011), which can be interpreted as the social impact of new actions taken by stakeholders as a result of interaction with the research (Molas-Gallart and Tang, 2011). The use of productive interactions also allows researchers to understand that every step is valuable for the achievement of social impact, from the first contact to the conclusion of the research (Spaapen and Van Drooge, 2011). These interactions are considered a precondition for successful research (Molas-Gallart and Tang, 2011). Examples of productive interactions include participation in advisory boards or policy development committees, collaborative research, informal meetings, media interviews, presentations, demonstration, advice to organisations or expert testimony before a legislative body (Ozanne et al., 2017). In-itinere impacts can be direct or indirect (De Jong et al., 2014). When a research project concludes and researchers transfer knowledge to other

projects (Molas-Gallart and Tang, 2011), the impact is considered indirect. Productive interactions are a good way to clarify how knowledge contributes to the observed impact. The framing method, interviews and analysis of documentary material can be used to identify productive interactions (Esko and Tuunainen, 2019; Esko and Miettinen, 2019). Another evaluation tool is the communicative methodology, used by Redondo-Sama et al. (2020) to evaluate the in-itinere social impact of psychological projects (Tellado, Lepori and Morla-Folch, 2020). This methodology incorporates arguments from social actors and developing actions that promote positive social policies (Gómez, Elboj and Capllonch, 2013). Different techniques can be used to extract information, including interviews and observations (Redondo-Sama et al. 2020) such as communicative daily life stories (Tellado, Lepori and Morla-Folch, 2020; Gómez et al., 2019), communicative focus groups and communicative observation (Gómez et al., 2019). In this in-itinere evaluation, the geographical dimension could be local or extended, but as the project is still under development, the evaluation only considers short-term impacts. The sustainability dimension will be used to check whether any SDGs have been achieved or whether the research needs to be redirected to achieve them.

In the ex-post evaluation, it is possible to detect impacts that add indicators to the thematic areas proposed in the initial phase of the project (Vanclay et al., 2015; Li et al., 2014). The analysis of productive interactions and the communicative methodology can also be applied in this evaluation, which helps capture not only the direct impact but also the indirect impact. A final report about the social impact is proposed, identifying the status of the research and the knowledge that has been developed in a language accessible to all stakeholders (Bornmann and Marx, 2014). The information is made available to society and can be used by public officials for policy reporting (De Jong et al., 2014). Complementarily, an analysis of alternative metrics used to measure the social impact of social media research may be considered (Bornmann, 2015; Bornmann, Haunschild and Marx, 2016; Cho,

2017; De Silva and Vance, 2017; Kale et al, 2017; Bornmann and Haunschild, 2018; Kolahi and Khazaei, 2018; Bornmann, Haunschild and Adams, 2019; Dardas et al., 2019; Tonetti, 2019; Garcovich and Adobes-Martin, 2020; Pejić et al., 2020; Pulido et al., 2020; Sedighi, 2020; Viana-Lora and Nel-lo-Andreu, 2020). Interestingly, research projects are increasingly using social media as a tool for dissemination of results (Garcovich and Adobes-Martin, 2020; Pulido et al., 2020; Viana-Lora and Nel-lo-Andreu, 2020) beyond the scientific field (Bornmann, 2015). This can be a growing metric, but it should not be considered the only tool because data may vary depending on the source from which they are extracted (Cho, 2017). For such reasons, digital data has not become widely accepted by academics (Jamal and Alimohammadi, 2015). The geographical dimension of ex-post impacts is both local and extended thanks to the global scope of the Internet. The ex-post evaluation can be carried out in the short or long term (Flecha, 2018). If the analysis is carried out right at the end of the project, short-term impacts will be mostly detected, but if the analysis is carried out at a later time, long-term impacts can be captured as well. For example, in the medical sciences, up to 17 years have elapsed between medical trials and the demonstration of benefit to society (Ozanne et al., 2017). The SDGs ultimately achieved by the project add value to the sustainability dimension.

3.2.3. Methodology for analysing the social impact of applied research

This article applies the framework presented in Section 2, focusing on an ex-post evaluation of a tourism research project. The aim is to report the impact achieved by a project and to validate the methodology. This section introduces the sources of information used, the analysis techniques deployed and the impact domains defined to evaluate the case study and to design the analysis procedure.

Sources of information, analysis techniques and areas of impact

There is no single way to measure the social impact of a research project (Bornman, 2012). Data collection (Cunha et al., 2012; De Jong et al., 2014; Hill, 2016; Hanna et al., 2020; Chams et al., 2020) increasingly tends to incorporate social media-based metrics (Cho, 2017; Dardas et al., 2019; Sedighi, 2020; Viana Lora and Nel-lo Andreu, 2020; Garcovich and Adobes Martin, 2020), productive interactions (Molas-Gallart and Tang, 2011; De Jong et al., 2014; Eschenbach, 2017; Esko and Tuunainen, 2019), interview results (Esko and Miettinen, 2019; Tellado et al., 2020; Duque et al., 2020) and evaluation reports (Bornmann and Marx, 2014). Data processing techniques may be qualitative, quantitative or mixed, and those that best suit the nature of the project should be selected. In view of the experience gained so far (Smith, 2001; Cunha et al., 2012; Deery, Jago and Fredline, 2012; McCombes, Vanclay and Evers, 2015; Van den Besselaar, Flecha and Radauer, 2018; Corsi et al., 2019; Chams et al., 2020), the information can be categorised into six main areas: communication and promotion, policy and regulation, economic benefits, new technological resources, environment and social improvement.

Characterisation of the case study

For the case study, a basic research project in the field of tourism entitled "Analysis of the role of territorial policies in the management of tourist destinations in the age of mobility (POLITUR)", with reference CSO2017-82156-R, was selected. It was a project funded by the Spanish Ministry of Science, Innovation and Universities in the 2017 call for R&D&I projects aimed at societal challenges. The duration of the project was three years. Its main objectives were to identify, understand and review the role of place-related issues regarding destinations' tourism policies as a necessary and fundamental driver for improving prosperity and sustainability (environmental, economic and cultural); to discuss, evaluate and propose prescriptive systems to guide decision-making mechanisms of the actors (both public and private) involved

in the destination's governance; and to promote the implementation of effective mechanisms for regulating the activity regarding the tourist use of space. In this context, POLITUR also included, as an innovative issue, the specific objective to develop a system of indicators to evaluate the validity of the solutions that it might propose. This was motivated by the relevance of social impact for the Rovira i Virgili University (URV), the university to which the project was attached, which has a Social Council responsible for bringing the concerns and needs of society to the University and for projecting the potential of the activities carried out by the University to society.

Designing the procedure for analysing the social impact of research

Qualitative techniques were selected to assess the social impact of the POLITUR project. Qualitative data collection tools have been established as the most effective way to assessing social impact (De Silva and Vance, 2017), as they help to better understand the multidimensional and contextual nature of impacts (Reale et al., 2018) and make visible how research is at the service of citizens (Sordé, et al., 2020). From this perspective, it is important to determine what has been done with the research results, who has used them and the reason for their use, rather than to highlight the number of times that the research has been used (Bornmann, 2014). Furthermore, this impact could be interpreted from a multitude of perspectives (Lauronen, 2020). The complexity of assessment is accentuated in the social sciences by the fact that the results are less tangible compared to other fields of study (Lima and Wood, 2014; Olmos-Peñuela, Castro-Martínez and D'Este, 2014). As shown in Figure 9, the proposed procedure was structured in five phases: information collection, transcription and ordering of the information, codification of the information, data analysis and integration of the information.

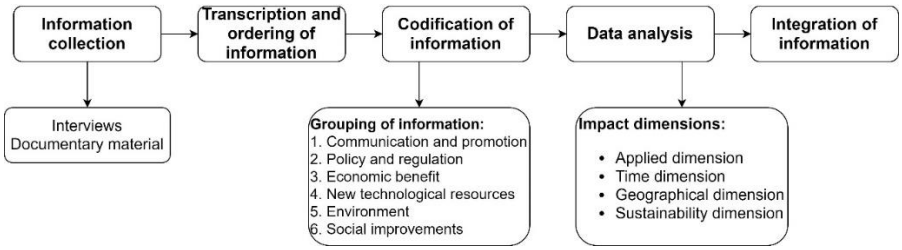

Figure 9: Phases implemented. Own elaboration.

Firstly, the information was obtained. The data collection technique consisted of semi-structured interviews and analysis of documentary material. The first set of data was collected from semi-structured personal interviews with the members of the research team, with the goal of detecting the social impact of their research. The interviews took place at the end of 2020, coinciding with the end of the three-year project. All 18 project researchers were interviewed using a combination of face-to-face, telephone and online communication. The interviews consisted of two parts: a structured part in which the researchers answered eight key questions, and an unstructured part that sought to find out, within the narrative of the interviewees, which actions have had a social impact. The observation of the social aspects related to the project was important. The second set of data was documentary material, comprising published scientific articles, articles and dissemination material, theses completed within the project and publications in social media. Secondly, the information collected from the interviews was transcribed and sorted, and the documentary information was organised. Thirdly, the information was coded in order to group it into comprehensive ideas. In this particular case, and due to the uniqueness of the project, the information was grouped into six main areas: communication and promotion, policy and regulation, economic benefits, new technological resources, environment and social improvements. This information allowed for the development of a set of indicators in each thematic area. Fourthly, the information was analysed to detect impacts based on the four dimensions of action: applied dimension (direct or indirect impacts), temporal

dimension (short- or long-term impacts), geographical dimension (impacts on a local or extended scale) and sustainability dimension (linkage between the impact and the SDGs). Finally, all the information was integrated and the results were extracted, as shown in Section 4.

3.2.4. Results

The results of the analysis are summarised in Figure 10. A number of indicators classified within the six thematic areas were developed. Each indicator was analysed to highlight the impact on each of the dimensions.

Thematic area	*Indicators*	*Applied dimension*		*Time dimension*		*Geographical dimension*		*Sustainability dimension*
		Direct impact	Indirect impact	Short term	Long term	Local	Extended	SDGs
Communication and promotion	Mention in the media for public debate	x		x		x	x	
	Participation in public hearings or conferences	x		x		x	x	
	Use of research in educational documents	x		x		x		
	Citations in advocacy publications	x		x		x	x	
	Twitter posts	x		x		x	x	
Policy and regulation	Incorporation in planning documents	x			x	x	x	
	Change in public attitude		x		x	x	x	
	Public engagement		x		x	x	x	
	Public dissemination of surveys to facilitate decision making	x		x		x	x	
	Drafting of guides, books and the like		x		x	x	x	
Economic benefit	New employment creation	x		x		x		
	Proposals for business incorporation	x			x	x		
	Proposals to increase incomes		x		x	x		
	Proposals to increase per capita income		x		x	x		
New tecnological resources	Mapping systems that bring about social improvement	x			x		x	
	Exploration of ICT tools		x		x		x	
	Use of data sets, software and facilities	x			x	x	x	
Environment	Incorporation into sustainability-based management guidelines/protocols		x		x	x	x	
	Participation in discussions for sustainable management improvement		x		x	x	x	
Social improvements	Incorporation in proposals for infrastructure improvements		x		x	x		
	Incorporation in proposals for improving social equity	x			x	x		
	Incorporation in proposals for improvement of citizen participation	x		x		x		
	Incorporation in proposals for improvement to solve social problems	x			x	x		
	Incorporation in proposals to improve the quality of life of the population		x		x	x		

Figure 10: Project impacts by thematic area. Own elaboration.

For ease of analysis, the following section has been divided into two main sections: thematic areas and dimensions.

Thematic areas

Communication and promotion

The scientific production derived from the project has been published in high-impact journals and presented in national and international workshops and research conferences. Nevertheless, this dissemination does not generate social impact as such. It is the dissemination of results through media

at the local, national and international level that causes benefits in society as their coverage via newspapers and news programs allows the information to be transmitted to a wider audience. In the POLITUR project, researchers also communicated with the general public via talks and activities aimed at disseminating the results of the project. The COVID-19 pandemic made it necessary to adapt this communication to the online modality, and the information has also been shared on social media through social networks such as Twitter and the project website (http://politurproject.org/). This website contains all the information on the work team, the publications and the related conferences. The social impact because of social media communication and dissemination is direct and in the short term (Pejic, et al., 2020). In this vein, a survey conducted by Álvarez-Bornstein and Montesi (2019) about Twitter users who follow researchers found that users obtained ideas for their work and implemented new scientific and technical advances in their professional areas, allowing them to interact with researchers to resolve doubts and ask questions.

Policy and regulation

During the project's development, the members of the POLITUR team maintained important relations with destination managers and organisations with influence on tourism policy and regulation, thus facilitating the reception of proposals and initiatives. The researchers interviewed public and private institutions throughout the project with the aim of gathering the opinion of stakeholders on the subject matter. Through surveys, they also incorporated the views of tourism business associations, tourists and residents into the project. Thus, POLITUR had the opportunity to improve the awareness of the actors interviewed, all of whom had the power to influence public and private decision-making. In particular, the project has had an indirect long-term social impact by contributing to the design of spatial tourism behavior management policies at the local level and by providing managers tools for better management and planning through the development of

governance procedures related to the coordination and design of common agendas between stakeholders.

Economic benefit

POLITUR generated a direct social impact in the short term by creating two new jobs: a trainee researcher and a technician. Thus, it directly incorporated graduate students into the labour market. Additionally, beyond the execution of the project itself, POLITUR favoured the creation of value from knowledge-developing contributions to increase the economic benefit of tourism in the areas under study. This is the case, for example, with recommendations related to the design of onshore itineraries for cruise tourists, widening the range of activities in which they could participate, directing them to places with commercial and recreational activities and increasing the supply of complementary leisure activities. These contributions were communicated to the tourism management officials in the tourist destination so that they could incorporate them into their planning policies, generating an indirect social impact in the long term by increasing the economic benefit of the destination.

New technological resources

The results of POLITUR highlighted technology's capacity for the intelligent management of destinations. The project analysed the benefits of using different digital sources, the interaction between mobile populations in destinations and the management opportunities derived from the digital footprint of visitors. An example of this relates to the direct social impact derived from the exploration of potential mobility patterns through the recording and tracking of people in video sequences. This allowed the POLITUR team to redirect tourist flows to avoid overcrowding and to improve the quality of life of residents in the long term. In addition, project researchers also participated in other related projects with the aim to deploy strategic and digital tools directly related to the short-term management of visitors' journey to and within the destination.

Environment

The project researchers transferred knowledge to the managers of tourist destinations in order to reduce the environmental impact caused by tourist activity. In this vein, they suggested measures to adapt buildings to the future climate scenario, to raise environmental awareness among tourism stakeholders, to facilitate the improvement of energy efficiency and consumption and to help to increase the commitment to the protection of beaches to combat erosion. There were also indirect social impacts through researchers' involvement in other related projects aiming to provide guides for sustainable practices and climate services for better governance of tourist destinations.

Social improvements

POLITUR made it possible to analyse the factors that produce social exclusion among the most vulnerable groups at destinations as a result of the tourism specialization of certain spaces, generating a direct and long-term social impact. Research initiatives related to POLITUR that have focused on solving social problems and have been awarded at the national and European level have aimed to develop innovative solutions to the social conflicts and externalities produced by tourism-related mobility in cities. Thus, this project provoked an indirect social impact resulting from the development of other projects aiming to design alternative policies for more socially inclusive places.

Study dimensions

Applied dimension

As of the writing of this paper, most of the reported impacts of the POLITUR project have been direct. In fact, direct impacts are most common when any project is just finished. However, it should be noted that indirect impacts may be also important after the end of the project and that, to be adequately identified, they need particularly designed methods to assess them (Silva and Vance, 2017). For the moment, most of the identified indirect impacts of the POLITUR project are those derived by applying the knowledge developed and acquired

within the project to other related projects undertaken during the same period. This type of impact is complex, as it means that it was not the POLITUR project itself that generated benefits in society, but that POLITUR served as the basis for action in other applied projects that had social impact. This would mean an indirect impact from POLITUR and a direct impact from the new research (Van der Weijden, Verbree and Van Den Besselaar, 2012).

Time dimension

Following the same rationale as in the previous dimension, due to the short-term assessment of the social impact of the project, it is not possible to detect issues such as economic improvements brought on by the results of the research. Communication and promotion is a dimension that stands out in short-term impacts, as it mainly consists of publications, mentions and participation in conferences and congresses that seek to disseminate the results, as well as the resulting dissemination through media, digital social media and the Internet. The other thematic areas generally have long-term impacts, as a consequence of applying the research results once they have been transferred.

Geographical dimension

The project analyzed specific regional and local spaces mostly in Catalan tourism destinations. This is what we call the local dimension in our analysis and, when analyzing the social impact of the project, it refers to the effects produced in the areas of study where it the research was conducted. However, the acquired knowledge could have been applied to other geographical areas not analysed within the POLITUR project, through the transfer of this knowledge to other applied projects. This is the extended dimension of the social impacts of the project. POLITUR has mainly impacted the local dimension, although it is hoped that in the long term the results will be applied to other tourist areas. Such extended impact would have to be monitored adequately.

Sustainability dimension

POLITUR made contributions to 8 of the SDGs set out by the United Nations in 2015, as shown in Figure 10. SDG 4, on quality education, was promoted through the project's support of doctoral students and through the high impact of the resulting scientific publications. This has led to usable and applicable results for society. SDG 8, on decent work and economic growth, was attained through proposals seeking to increase tourist spending and to improve the economy of the analysed areas. SDG 9, on industry, innovation and infrastructure, was covered through the development of new tools for the assessment and analysis of tourism flows. SDG 11, on sustainable cities and communities; SDG 12, on responsible production and consumption; and SDG 13, on climate action, were pursued through ongoing proposals to mitigate the environmental impact of tourism, the identification of more sustainable actions and the involvement of stakeholders. The analysis of the effects of tourism on vulnerable populations, the study of social exclusion of certain populations derived from tourism and the search for solutions are closely related to the achievement of SDG 10, on reducing inequalities. All contributions supported SDG 17, on partnerships to achieve the goals.

3.2.5. Discussion

Beyond the analysis of the ex-post social impact of the results of POLITUR, the specific application of the evaluation framework in this project can be useful to advance the validation of the proposed tool. In this vein, it can be highlighted first that classifying the information about social impacts into six thematic areas provides a mechanism to clearly identify the types of impacts and their roles as components of the societal consequences of research.

The area of communication and promotion is fundamental for any research project since generating social impact requires transferring scientific knowledge to institutions and to society in general (Flecha, 2018). Successful communication between research and societal stakeholders is also fundamental

(Bornmann, 2014). There may be many policy-relevant research topics (Bornmann, Haunschild and Marx, 2016), but whether the communication and promotion processes actually had an impact must be assessed separately. Researchers in an expert role of providing policy recommendations (Muhonen, Benneworth and Olmos-Peñuela, 2020) are significant, but it is the follow-up of the process that will determine whether there has been an impact. Projects that have captured social impact through the formulation of policies aimed at solving social problems (Tellado, Lepori and Morla-Folch, 2020) should be adequately referred in relevant policy documents (Bornmann, Haunschild and Marx, 2016). The application of tourism research can also generate economic benefits such as increased productivity (Chams et al., 2020), job creation (Samuel and Derrick, 2015) and the sale of new products (Cunha et al., 2012). This has been the most studied area within social impact (Bornmann, 2013), even though this framework only considers it as one of the six pillars of the evaluation. The social impact of tourism research has also included the development of technological resources (Bornmann, Haunschild and Marx, 2016; Eschenbach, 2017). This is an area that affects both private and public organisations (Cunha et al., 2012). The environmental field has widespread social concern (Wolf, 1982). In a world increasingly concerned about climate change and gas emissions, it seems appropriate for projects to focus on reducing this problem (Bornmann, Haunschild and Marx, 2016) as it has been identified through the application of the designed evaluation framework. The last area included in the evaluation framework is the social improvements generated by research. Research can help in the fight to reduce social inequalities (Tellado et al., 2020). In this area, aspects such as social equity, social inclusion, social justice and gender equality should be analysed so that research can be the key to a fairer society.

On the other hand, the analysis of dimensions allows for reflection on the importance of planning the project and the ex-post evaluation impact; otherwise, most of the impacts will

be identified as direct and short-term. This study also highlights that indirect impacts must include the impacts derived from the development of other initiatives, projects or alliances. Furthermore, the analysis reinforces the need for research monitoring in the long term and in geographical areas other than those analysed in the project. International projection is one of the goals that should be considered in tourism research projects, with the aim of extending research to other destinations and increasing its impact in the geographical dimension.

3.2.6. Conclusion

This article seeks to advance the methodology of social impact assessment in tourism research. To this end, an analytical framework was created with various tools, evaluation moments and dimensions. The application of the ex-post evaluation to the POLITUR project as a pilot test opens discussion on how to design an internationally accepted assessment system that aligns with the SDGs of the United Nations.

The proposed analytical framework helps to plan and organise the social impact assessment of a research project. It identifies impacts at all stages of research and avoids the bias of a single method of data collection. In this way, this research reduces the problems encountered in other social impact assessment tools (Viana-Lora and Nel-lo Andreu, 2021). The problem of attribution, which is the main problem with social impact evaluations, arises when social impact is linked to a project under study (Spaapen and Van Drooge, 2011; Bornmann, 2012; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020; Tahamtan and Bornmann, 2020). The evaluation of social impact should be improved so that it does not depend on each project's methodology (Tellado et al., 2020); instead, clear processes of attribution should be increasingly defined from a grounded process of analysis and evaluation of particular research projects, such as the one presented in this paper.

Tourism research has additional particularities that make it even more difficult to assess social impact. For one, tourism is a complex and dynamic social phenomenon that encompasses different branches of research (Picornell, 2015), so evaluating this impact must also involve a multidisciplinary team. Additionally, tourism research has not yet highlighted a broad concept of its social impact, instead highlighting some of the impacts of its activity. This article aims to raise awareness among tourism researchers about the importance of the social impact of their research activity.

A limitation of this study is that it only applies one part of the proposed analytical framework, the ex-post evaluation. Nevertheless, the authors affirm the need to apply the framework from the beginning of the research and to follow up at all stages. Planning and targeting research from strategic priorities, such as the SDGs, will help in achieving social benefits, thus making it easier to generate social impact (Lauronen, 2020; Hill, 2016).

4. ENHANCING THE SOCIAL IMPACT OF RESEARCH

Researchers find themselves at an unusual juncture in undertaking data collection for the purpose of corroborating the social scope of their work, which presents them with a situation of novelty and challenge. At times, they are committed to making choices between competing approaches, carefully weighing whether to orient their research work towards achieving social impact or to aim for high academic achievement, which in turn is a prerequisite for the continuity of their research work. These decisions affect the social aspects established by funding sources. In turn, they must choose between the primacy of collaboration and the requirement to compete for new milestones, as well as consider whether it is appropriate to disseminate their research results in an open access format (Doyle, 2018). In the present chapter, the purpose lies in intensifying the societal impact of research by guiding researchers toward elements that clarify both the direction their analyses should take and the procedure for demonstrating the utility that these entail for society as a whole.

4.1. Pathways to generate social impact and sources to corroborate it

Within this section, article 4 is included as a meticulous exploration of research in the field of tourism, situated within the framework of Excellence in the United Kingdom. This study highlights the pathways in which researchers should take into account to enhance their social impact and the sources that are commonly used to demonstrate this impact.

Article 4: The societal impact of tourism research of the Research Excellence Framework 2021

Viana-Lora, A. (2023). The societal impact of tourism research of the Research Excellence Framework 2021. *Journal of Policy Research in Tourism, Leisure and Events*, 1-16. DOI: 10.1080/19407963.2023.2212336

Abstract

The aim of this article is to analyse the REF 2021 impact cases on tourism that show evidence of societal impact. The method

used is a content analysis. The REF 2021 database was used to download the case studies of tourism with societal impact through the application of search filters. A filtering process was carried out in which each of the downloaded case studies was read, excluding impact cases not related to the thematic area. From this screening process, 12 case studies were selected. The results of the analysis identified potential pathways for generating societal impact and highlighted sources of corroborating societal impact. The identification of these pathways is important, as future research can use this information to plan their research and design the potential societal impact. In addition, establishing the sources for corroborating impact avoids problems identified in societal impact assessment such as attribution or causality.

Keywords: tourism; research; REF; pathways; societal impact

4.1.1. Introduction

The growing interest in evaluating research has led to the creation of evaluation tools such as the Engagement and Impact Assessment (EI) in Australia (Gunn and Mintrom, 2018), the Performance-Based Research Fund (PBRF) in New Zealand (Smart, 2009) or the Research Assessment Exercise (RAE) in Hong Kong (French, Massy and Young, 2001). In the United Kingdom, the four higher education funding bodies created the Research Excellence Framework (REF) in 2014, which replaced the previous Research Assessment Exercise (RAE) initially developed in 1986 (Phillips, Page and Sebu, 2020). The REF is a mechanism for assessing the quality of research conducted by higher education institutions (HEIs) (Pinar and Unlu, 2020). REF 2014 was the first evaluation framework to introduce the concept of impact as an evaluation criterion (Kelly et al., 2016; Brook, 2018). In the second edition, REF 2021, it was evaluated based on three weighted criteria as follows; quality of outputs (60%), non-academic impact (25%) and research environment (15%) (REF, 2021). Unlike REF 2014, in REF 2021 the so-called "impact templates" have been removed and non-academic impact has gained more weight (Pinar and Unlu, 2020; Brook, 2018). This highlights the increasing

importance of non-academic impact for funding agencies. The REF 2021 impact cases are classified according to their field of study into units of assessment, divided into 4 panels (A - D) and, in turn, into 34 sub-panels. In REF 2014 there were 36 sub-panels, but in REF 2021, 4 sub-panels related to engineering have been grouped together, while a new one on archaeology has been created (Brook, 2018). These review panels are composed of researchers from within and outside academia (Hill, 2016).

The REF peer review process identifies the non-academic impact of research understood as "an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia" (REF, 2022). Therefore, the impact will not only be quantitative, but also qualitative, for which expert reviewers will analyse the narrative to verify the described impact (Bornmann and Marx, 2014). Case studies are structured for evaluation based on a four-sheet template in REF 2014 (Samuel and Derrick, 2015) and a five-sheet template in REF 2021. This review aims to compare research to establish reputational criteria, provide accountability for public investment and inform funding allocation (REF, 2022). The results of the REF therefore establish the ranking of universities according to their quality and will shape the distribution of research funding budgets (Pinar and Unlu, 2020; Kelly et al., 2016). This evaluation system promotes researcher awareness (Sivertsen and Meijer, 2020), while at the same time making researchers more accountable for the effects of their research (Ozanne et al., 2017). In addition, the reputation of universities will be key to attracting students and researchers (Pinar and Unlu, 2020). Universities therefore need to demonstrate that their research has benefited society in order to maintain prestige and continue to obtain funding (Hanna et al., 2020).

Given the increased interest in the subject, this article aims to analyse the REF 2021 impact cases with a societal impact on tourism. This study will allow us to identify potential pathways to generate societal impact in order to promote their use among

tourism researchers and to highlight sources to corroborate such impact.

From this point, the article is structured as follows. Section 2 reviews the literature on the societal impact of tourism research. Section 3 explains the method carried out in this article. Section 4 extracts the results of the analysis carried out. Section 5 presents the discussion of the results obtained and Section 6 presents the conclusions of the research.

4.1.2. Literature review

Societal impact of tourism research

Research impact is multidimensional (Viana-Lora, Nel-lo-Andreu and Anton-Clavé, 2022). The social dimension has gained visibility thanks to the interest of funding bodies in subsidising the highest quality research, which clearly identifies societal impact, and the need to justify the use of public money through its contribution to society (Bornmann, 2013; Holbrook and Frodeman, 2011; Derrick and Samuel, 2016; Boshoff and De Jong, 2020). Therefore, the societal impact of research, understood as the societal benefit derived from the use of research (Lima and Wood, 2014; Wilsdon et al., 2015), is positioned as a priority for higher education institutions (Van den Akker et al., 2017; Fotaki, 2020). The need to achieve this benefit raises the visibility of the concept of impact pathways, which are the means by which societal impact has been produced and which allow for the identification of possible pathways that enhance the societal impact of research (Spaapen and Sivertsen, 2020; Reed, Bryce and Machen, 2018). To this end, Muhonen, Benneworth and Olmos-Peñuela (2020) analysed the timing of societal impact in 60 COST ENRESSH Action (European Network for Research Evaluation in the SSH) to identify four general pathways leading to societal impact: dissemination, cocreation, reacting to societal change, and driving societal change. These four pathways are divided into the following twelve pathways: the interactive dissemination pathway, the collaboration pathway, the public engagement pathway, the expertise pathway, the mobility pathway, the 'anticipating anniversaries' pathway, the 'seize

the day' pathway, the societal innovation pathway, the commercialization pathway, the 'research engagement as a key to impact' pathway, the knowledge 'creeps' into society pathway and y the building 'new epistemic communities' pathway (Muhonen, Benneworth and Olmos-Peñuela, 2020). Ozanne, Davis and Ekpo (2022) also delineated twelve societal impact pathways in the field of consumer psychology in order to encourage the use of research to demonstrate its societal benefit: trickle down dissemination, interactive dissemination, substantive harnessing, exigency research, incendiary research, expert consultation, commercialization, capacity building, research coalition, organizational patnerships, empowerment collaborations and community building.

The scientific production on the societal impact of research is just over a decade old (Viana-Lora and Nel-lo-Andreu, 2021). However, studies focusing on the field of tourism are almost non-existent (Viana Lora, A. and Nel-lo Andreu, 2020; Viana-Lora, Nel-lo-Andreu and Anton-Clavé, 2022). This may be because the particularities of the tourism industry make the process of knowledge transfer to stakeholders more complex (Cooper, 2015; Baggio and Cooper, 2010; Thomas, 2012), thus reducing the possibility of applying the knowledge generated by researchers for subsequent societal benefit. In general terms, studies on the societal impact of research have focused on the search for an appropriate evaluation method (Smit and Hessels, 2021; Benneworth and Olmos-Peñuela, 2022). This assessment has been debated because of its complexity, the breadth of interpretations derived from societal phenomena and the problems derived from this assessment (Lauronen, 2020; Viana-Lora, Nel-lo-Andreu and Anton-Clavé, 2022; Viana-Lora and Nel-lo-Andreu, 2021). The evaluation problem that appears most frequently in the literature is the attribution problem (Bornmann, 2012; Bornmann, 2013; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020; Spaapen and Van Drooge, 2011; Tahamtan and Bornmann, 2020), followed by the causality problem (Bornmann, 2012; Bornmann, Haunschild and Adams, 2019;

Lauronen, 2020; Sivertsen and Meijer, 2020). Research can, in addition, produce intended and unintended outcomes, and these, in turn, can produce positive impacts or negative impacts (Sørensen et al., 2022). There is also the possibility of benefits that are not directly related to the object of the research, in other words, indirect impacts (Van der Weijden, Verbree and Van Den Besselaar, 2012; Allá et al., 2017; Boshoff and De Jong, 2020). This casuistry makes societal impact assessment a subject yet to be investigated (Chams, Guesmi and Gil, 2020). The method considered most appropriate, and also the most widely used, is the case study (Bornmann, Haunschild and Marx, 2016).

REF evaluation metrics

REF case studies have been used to analyse the societal impact of research in different fields of study such as medicine (Hanna et al., 2020; Thompson and McKenna, 2022), technology (De Jong et al., 2014) or more generally (Bornmann, Haunschild and Adams, 2019).

Within these case studies, the sources provided by researchers to corroborate impact are relevant. In the study by Kousha, Thelwall, and Abdoli (2021), they analyze the websites cited as evidence of impact in the REF 2014 to examine how society benefits from research. The results show how the most cited types of websites in Panel A (Medicine, Health, and Life Sciences) are clinical guidelines or trials, in line with the results of the study by Hanna et al. (2020), which analyzes REF 2014 studies on cancer. In Panel B (Physical Sciences, Engineering and Mathematics), the most cited websites combine news, videos, and specialized websites. Panel C (Social Sciences) obtained more websites on UK government institutions. In the main Panel D (Arts and Humanities), there were more citations of news, videos, social media, or blogs. Within this category is the study by Brook (2018), which analyzes the evidence of impact in the field of art and highlights attendance at events as the primary source of evidence for impact.

The development of REF evaluation metrics has also been the subject of criticism in various studies. For Woolcott, Keast, and

Pickernell (2020), REF takes into account aspects such as the number of citations or the amount of funding obtained, which leads to inadequate measurement of the real impact of research in areas such as humanities and social sciences. Impact templates focus on the production of measurable and tangible impact based on "illusions" and "myths," rather than recognizing the complexity and diversity of the impacts that can arise from academic research (Bandola-Gill and Smith, 2022; Thomas, 2018a). This causes researchers to focus on topics that can have measurable impact, rather than addressing important and valuable topics that may have less quantifiable but no less important impacts (Woolcott, Keast, and Pickernell, 2020). UK universities are, therefore, experiencing tension between academic logics focused on knowledge production and academic excellence and business logics based on profitability and efficiency (Shields and Watermeyer, 2020). This process can distort research to meet the interests of funders and other stakeholders, while also causing bias in the selection of research topics and presentation of results (Kidd, Chubb, and Forstenzer, 2021).

There is clearly a trend towards production and quantification of results, which has led to greater pressure to publish and compete for limited resources, generating a search for quick results and thus affecting university performance (Shields and Watermeyer, 2020; Macfarlane, 2021; Thomas, 2022). This process has been referred to by Lee and Walsh (2022) as a bureaucratization of academic science. This has led to a scientific culture that values publication quantity and funding acquisition more than research quality and relevance (Lee and Walsh, 2022).

The credibility of the information provided by researchers in REF impact studies has also been analyzed. The article by Bonnacorsi et al. (2021) asserts that impact statements that include specific details and external collaborations tend to have greater credibility, which is more complex in the field of social sciences than in others such as medicine or engineering.

Crawford (2020) provides their reflection after participating in the REF 2014 and 2021 and suggests that "knowledge co-production" can improve the way impact of research is defined and measured. By involving stakeholders in defining and evaluating impact, more relevant and useful impact indicators can be created.

The field of tourism has also been pressured by this evaluation system, conditioning the selection and direction of research topics and leading to a decrease in critical and theoretical research (Brauer, 2018). Studies analysing the impact cases of the REF in the field of tourism are almost non-existent. Brauer and Dymitrow (2020) analysed all REF2014 tourism case studies for their contribution to sustainable tourism. These case studies have also been analysed by Phillips, Page and Sebu (2020) highlighting a total of 16 with societal impact. Brauer, Dymitrow and Tribe (2019) and Thomas (2018b) also used this information as a starting point to analyse the non-academic impact of research.

To the author's knowledge there is no study that analyses the societal impacts of REF 2021 tourism impact case studies. For this reason, and to fill this research gap, this article will analyse these impact cases, highlighting potential avenues for societal impact and sources for corroborating societal impact.

4.1.3. Method

The method used consists of a content analysis of REF 2021 tourism case studies that mention societal impact. Societal impacts are analysed only because of the increased awareness of the societal responsibility of researchers and the impacts their work can have on society. These case studies are available in an open database at (https://results2021.ref.ac.uk/impact) as of 22 June 2022. REF 2021 rated research from 157 higher education institutions and research impact was assessed in 6361 case studies. The keyword touris* was used as a search term for the data download, yielding 497 results. Societal impact was then applied as a filter in the impact type category, extracting 190 impact case studies from the REF 2021 database that did not

mention any societal impact. Although out of the 34 REF evaluation units there is one on Sport and Exercise Sciences, Leisure and Tourism, it was not filtered using that category to extract the information, as the cross-cutting nature of tourism allows the development of case studies related to other evaluation units. The 307 selected impact cases were downloaded, but on reading them many did not focus specifically on tourism. An arduous effort was made to evaluate each of the case studies using the document presented by REF 2021 to identify those that really focus on the societal impact of tourism research, excluding the unrelated impact cases. From this filtering process, 12 case studies were selected.

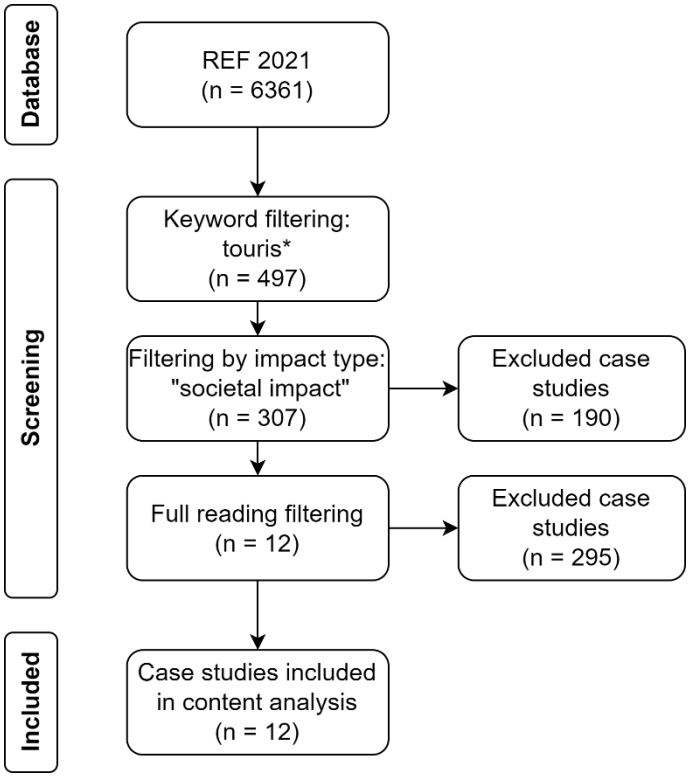

Figure 11: Filtering protocol and selection of case studies. Own elaboration.

A manual content analysis was carried out on the 12 case studies that met the inclusion criteria. Due to the size of the sample, this manual analysis was considered more

appropriate than the use of software, which is more suitable for bibliographic analysis and large amounts of data. Content analysis is a method for systematically analysing information on a specific topic (Stemler, 2000). It has been proposed as a valid tool for assessing the societal impact of research (Smith, 2001). It is a process based on objectivity (Kolbe and Burnett, 1991), whose transparency allows for the replicability of the research (Duriau, Reger and Pfarrer, 2007; Krippendorff, 1989). This analysis can be used qualitatively and quantitatively, so it is considered a mixed method (Berg and Lune, 2001; Camprubí and Coromina, 2016). It is a widely used method in research and is very useful due to its flexibility and ability to adapt to the context and situation (Camprubí and Coromina, 2016). To begin the content analysis, all the selected case studies were read, carrying out a preliminary coding process in which the relevant themes for the analysis were highlighted and underlined. After a second reading, the information was coded into the following categories of analysis; (i) pathways to societal impact and (ii) sources of evidence of impact. The results of the study are presented in the following section.

4.1.4. Results

General information on the 12 case studies is shown in Table 6. These cases were submitted by a total of eight universities. This reflects which United Kingdom universities are making a societal impact with their tourism research. Both tourism activity and tourism research can have impacts on society. Notably, this study highlights the societal impacts of tourism research, which refers to the effects that tourism research can have on the people and communities involved. It should be noted that the REF templates bias the information presented and this content may not represent the full societal impact derived from the state of the art of UK tourism research. Of particular note is the University of Surrey with four case studies, followed by Bournemouth University with two case studies. With regard to the evaluation of these case studies, REF 2021 divides it into four panels according to the subject matter. The cases analysed are represented in Panel C of Social Sciences ten times and in Panel D of Arts and Humanities twice. These

panels are in turn grouped into different sub-panels. In the case of Panel C, there are twelve sub-panels, of which Panel 17 (Business and Management Studies), with six case studies, and Panel 24 (Sport and Exercise Sciences, Leisure and Tourism), with four case studies, are the ones that appear in this analysis. In Panel D they are classified in ten sub-panels, but only two appear in this study, 25 (Area Studies) and 34 (Communication, Cultural and Media Studies, Library and Information Management), with one case study each. This is due to the relationship of tourism with the social sciences and humanities (Golden, 2017).

#	Case study	Institution name	Main panel	Unit of assessment name
1	Emerging Media, Learning and Organisational Practice - driving change in tourism and education in Northern Ireland	University of Ulster	D	34 - Communication, Cultural and Media Studies, Library and Information Management
2	Developing a dementia-friendly visitor economy	University of Hertfordshire	C	17 - Business and Management Studies
3	Improved Practices and Outcomes in Tourism Destination Management	York St John University	C	17 - Business and Management Studies
4	Making slum tourism work to alleviate poverty and increase visibility of communities	The University of Leicester	C	17 - Business and Management Studies
5	Simplifying Public Administration in the Greek Tourism Sector	The University of Surrey	D	25 - Area Studies
6	Understanding and helping to minimise the effects of terrorism on tourism destinations	Bournemouth University	C	17 - Business and Management Studies
7	Digitisation of tourism and hospitality marketing: towards smart ecosystems	Bournemouth University	C	24 - Sport and Exercise Sciences, Leisure and Tourism

8	Enhancing tourism policy-making and planning through innovative forecasting	The University of Surrey	C	24 - Sport and Exercise Sciences, Leisure and Tourism
9	Improving labour management productivity in UK hospitality	The University of Surrey	C	24 - Sport and Exercise Sciences, Leisure and Tourism
10	Supporting the emotional wellbeing of hypermobile travellers	The University of Surrey	C	24 - Sport and Exercise Sciences, Leisure and Tourism
11	The COMBAT Toolkit; Tackling Trafficking in Human Beings within the Hotel Sector	The University of West London	C	24 - Sport and Exercise Sciences, Leisure and Tourism
12	Transforming tourism policy, industry practices and community engagement for sustainable development in Africa and Europe	University of Brighton	C	24 - Sport and Exercise Sciences, Leisure and Tourism

Table 6: Case studies analysed. Own elaboration.

The content analysis was structured into two main categories that gave rise to the following sections.

Pathways to societal impact of the research

The first category examined in the content analysis was the pathways to societal impact of the research. This analysis allowed us to identify the following six pathways used in the tourism case studies.

One pathway for impact is **the development of other spin-off projects or collaborations**. These spin-off projects from the case study research can produce benefits in society, in Case #1 this was through innovation in the Dutch tourism sector. In Case #2, collaboration with members from another country, Spain, provided knowledge on the value of quality of experience in visitor satisfaction, which is taken into consideration in strategic tourism decisions in Seville. The work carried out in Case #6 led to the researcher being

approached by the World Bank to be part of another project on terrorism and tourism in Central Asia. The collaborations between the researcher in Case #7 and different companies and institutions in the tourism sector seek to advance the tourism of the future. Case #12 led to other studies such as the one commissioned by the World Bank on the competitiveness of tourism in The Gambia.

Another pathway to achieve impact is **the design of applications, services or products**. Their creation does not produce a benefit in society as such, but their application can produce societal improvements. In Case #1, the knowledge of the research team supported the development of applications that seek to improve the tourist experience. Case #4 responded to the COVID-19 pandemic with the development of virtual tourism products that offer an alternative income in the favelas of Rio de Janeiro, an area heavily affected by this crisis. Case #9 served as the basis for the development of an emotional support service for work travellers aimed at increasing the emotional well-being of this population. Case #11 designed a toolkit for hotels to combat human trafficking through risk assessment and mitigation strategy.

Delivering training courses, workshops or presentations is another pathway of impact identified in this analysis. Transferring knowledge to stakeholders is an indispensable aspect necessary to produce impact. In Case #1, the research team's knowledge improved the teaching skills of primary school teachers through technology training. Case #2 also used the training of a nature park staff to adapt its facilities to visitors with dementia. Case #4 used the training of tour guides to benefit favelas in Brazil with tourism. Case #6 research was presented at a NATO workshop, seeking to teach participants effective countermeasures to potential terrorist threats. The researcher in Case #7 trained Egyptian government tourism workers to design a website to promote their tourism industry and conducted online sessions during COVID-19 to explain how smart technology could be used to restart tourism after

the pandemic. In Case #9, research findings were presented to three hotel groups to improve human resource practices. They also conducted seminars and workshops for members of the United Kingdom government. Case #11 inspired training courses for employees in the hotel sector to eradicate human trafficking in tourism. Case #12 researchers trained tour operators in Africa in techniques for responding to the tourism crisis and developing job skills.

Guides or manuals have been used in the case studies as a tool for transferring knowledge, and therefore as a means of impact. In Case #2, the creation of dementia-friendly tourism guides raises awareness and provides knowledge whose application will improve the experience of visitors. In Case #3, manuals are designed to expand the knowledge generated to other slum tourism locations that are not the focus of the project. The approach in Case #6 resulted in a handbook on hybrid warfare that served the governments of 14 different countries.

The influence of research on regulation or policy is another pathway of impact to highlight. In Case #2, research motivated the National Trust's policy initiative to make the 500 cultural sites they manage accessible to people with dementia. The researcher in Case #3 influenced the City of York's tourism management strategy towards a more participatory process. Greek tourism licensing regulations were developed based on the research developed in Case #5. In the UK, the Foreign Office said it would change the description of threats to travellers based on the work done in Case #6. Case #7 influenced UNWTO policy agendas on technological innovation. Case #8 provided a scientific basis for China's tourism policies. The United Kingdom's industrial strategy used research from Case #9 to boost tourism productivity. Research on human trafficking in the tourism sector developed in Case #11 served as the basis for the development of a European Parliament motion on worker training. Tourism crises arising from diseases such as Ebola or COVID-19 require new management procedures and regulations in Africa that were

supported by the research in Case #12. This case also led to research that influenced European policy, as in Cyprus, which sought to increase spending by tourists staying in all-inclusive accommodation in Paphos, or in the United Kingdom to organise the first national policy on Airbnb.

Recommendations are a very useful impact pathway, as they set out how to achieve societal impact with specific indications from researchers. It is the most commonly used pathway. In Case #1 the researchers made recommendations on the user journey that informed the development of cultural heritage strategies, as well as recommendations on planning and resource allocation to the Causeway Coast and Glens Museums service for the design of a value for money application. The guidelines developed in Case #2 also contain recommendations on dementia tourism that have influenced, for example, the design of a museum. The recommendations on the tourism strategy of the cities of York and Seville in Case #3 were implemented to advance the management of the tourism destination. Recommendations to streamline the tourism licensing process from Case #5 were taken up and implemented by the Greek government. Case #6 made recommendations on the most effective way to counter a hybrid warfare conflict in a tourism destination. The e-tourism strategies designed in Case #7 were implemented in different tourism companies and institutions, for example to increase the reputation of an online brand. The tourism management strategies developed by the researchers in Case #8 have led to successful marketing planning in China and human capital investment planning in Asian hotel companies. Case #9 developed recommendations on labour improvements and were implemented by a consulting firm seeking to increase hotel productivity through labour flexibility. Case #10 researchers developed recommendations on how to protect business travellers, to be implemented by corporate travel and human resources managers.

Sources to evidence the societal impact of the research

The second category of the content analysis recorded the sources used in the case studies to evidence the impact they had had. The sources that can be used to corroborate the impact of the REF are the different types of documents, databases and tools to assess the quality and impact of research. This analysis detected a total of 133 sources to corroborate the impact. Although the template recommends an indicative maximum of 10 sources of evidence to substantiate impact, 8 of the case studies exceeded this number. All case studies had more than 6 sources of impact. The most frequently used source was links to websites or documents, used in 11 of the 12 case studies on a total of 50 occasions. Each link was checked and it was found that in 4 case studies one of the links did not work. This does not imply that these links never worked, only that at the time of this research these links did not work. The majority of the case studies, a total of 8, used testimony as a source to corroborate impact. There were 40 testimonies observed in this analysis, which is 30% of the total number of sources analysed. Copies of emails were also used as evidence to corroborate impact, with 11 emails provided in 6 case studies. These testimonies and emails are not in the public domain. Therefore, the most common form of evidence is not available to the public. This breaks the principle of transparency advocated by the REF. Other sources such as letters, reports, guides, documents, articles and news, interviews, awards and regulations are less represented.

4.1.5. Discussion

This article analyses the twelve REF 2021 tourism case studies that had a significant impact on society. These case studies focus on eight United Kingdom universities. Despite the importance of tourism research in the United Kingdom, whose institutions are among the most productive in the world in the field of tourism (Zhang et al., 2015), these case studies do not seem to represent this reality. In fact, this is a lower number than REF 2014, in which sixteen societal impact tourism case studies were presented (Phillips, Page and Sebu, 2020). These

results provide food for thought for the research being conducted in this area of study and highlight the need to refocus this research to highlight the societal benefits of this research. It is true that research has great potential to impact society and solve problems, but for this to happen, researchers need to understand and apply the principles of research impact effectively (Bayley and Phipps, 2019). It may be that researchers simply lack the language skills to competently articulate their findings and this makes effective transfer impossible.

This analysis has highlighted different impact pathways present in the REF 2021 tourism case studies. A case study can produce a multitude of impacts, and these, in turn, can occur through several impact pathways (Muhonen, Benneworth and Olmos-Peñuela, 2020). The identification of these pathways is important, as future research can use this information to plan their research and design the potential societal impact. One of the pathways described in this study is collaboration. This pathway allows a researcher's area of influence to be expanded in order to get the research to the right place. Sometimes, as a result of these collaborations, spin-off projects are produced from the main research. The societal benefits of this spin-off project will also be indirect societal benefits of the main research. The development of applications, services or products has been considered in the literature as a societal impact (Bornmann, 2013), however, this study has considered it as an impact pathway because its application is necessary to obtain benefits in society. It is an interesting pathway because it allows the use of knowledge in a simple way. Training and capacity building is a way of impact that allows knowledge not to remain in the academy, but to reach society and promote societal impact through its use. Similarly, guides or manuals function as a tool for transferring knowledge. Influencing policy is an important avenue, as legislation has the capacity to produce benefits and change society. Tourism is related to negative phenomena such as overcrowding, the development of regulations that regulate the uncontrolled growth of the activity will improve the quality

of life of the local population. Research that develops recommendations focuses the study on the applicability of knowledge, and therefore increases the likelihood of societal impact if the recommendations are implemented.

This study also looked at sources of evidence of societal impact. It is important to note that no single source provides a complete picture of the impact of the REF, and that multiple sources need to be combined to obtain a comprehensive assessment. The most commonly used source for corroborating impact was the website, in line with the results of the article by Kousha, Thelwall and Abdoli (2021), these websites were mostly links to government websites, news, videos, social networks or blogs. These sources allow impact to be linked to specific research. In this way, they could help to solve the different problems encountered in societal impact assessment (Viana-Lora and Nel-lo-Andreu, 2021). On the one hand, they could help solve the attribution problem, as societal impact can be directly linked to specific research (Bornmann, 2012; Bornmann, 2013; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020; Spaapen and Van Drooge, 2011; Tahamtan and Bornmann, 2020). However, it can be difficult to determine that the impact is exclusively due to the research and that other factors have not intervened. In addition, societal impact may occur long after the research is conducted, making it difficult to attribute impact directly to the research itself. There are other issues that make this attribution difficult, such as the limitations of using a case study, such as researcher bias or subjective interpretation, or the availability of data, since, as mentioned above, there are sources to corroborate impact that are not available for consultation (Camprubí and Coromina, 2016). On the other hand, sources that corroborate impact could assist in identifying the cause that produces the impact in order to solve the causality problem (Bornmann, 2012; Bornmann, Haunschild and Adams, 2019; Lauronen, 2020; Sivertsen and Meijer, 2020). But determining this causality is also a complex task, as in some cases, the research is not conducted in a

controlled experimental setting and there may be uncontrolled variables that influence the outcome.

The complexity derived from the attribution of societal impact, coupled with the particularities and dynamic nature of the tourism industry, could be the reason for the lack of societal impact studies in the field of tourism research. Another reason could be the confusion between the conceptualisation of the social impact of tourism and the social impact of tourism research. The social impact of tourism refers to the effects, both positive and negative, that tourism has on local communities and society at large. On the other hand, the social impact of tourism research refers to the effect that the transfer and application of tourism knowledge has on the local community. However, although tourism research can provide valuable information and solutions to tourism problems, this transfer of knowledge from academia to practice is often limited (Thomas and Ormerod, 2017). Therefore, this transfer needs to be encouraged and the impact assessment of tourism research needs to be enhanced to improve the quality and relevance of research, and to ensure that research has a positive impact on society (Thomas, 2020).

The findings of this study should be considered in light of several limitations. First, the case studies analysed refer to United Kingdom research. Therefore, future research could analyse impact cases from other countries such as Australia, New Zealand or Hong Kong, as tourism research concerns may differ from place to place. Second, this analysis has the limitations of content analysis, such as the judgement of the researcher conducting the analysis (Camprubí and Coromina, 2016). Third, case studies tend to highlight the positive (Raftery et al., 2016), so the REF 2021 factsheets may only have highlighted aspects relevant to the evaluation. Fourth, the impacts analysed have already occurred, but research may continue to generate benefits not detected in this analysis (Smit and Hessels, 2021). Fifth, the type of analysis used is feasible only with a small sample size. Another line of future

research could be to analyse what effects the pressure related to metrics and impact assessment has on tourism research.

4.1.6. Conclusion

This article assumes the importance of tourism research as the core of change that will benefit society. In this context, the tourism research present in the REF 2021 impact cases is analysed to identify the ways in which research can benefit society and the sources for corroborating this benefit.

Although the societal impact of research is a growing topic, this study has shown that tourism impact cases that identify societal benefit are scarce. Researchers can take this article as a reference to plan their objectives and use the detailed avenues to enhance their societal impact. Tourism is an activity that produces a multitude of negative impacts (Archer, Cooper and Ruhanen, 2012) and research is the key to reversing this.

4.2 Influencing policy research to benefit society

From a scientific perspective, it is imperative to consider the interconnection and feedback between political power, society and science, understanding the mechanism by which political decisions and government structures influence the formation of collective attitudes, values and behaviors. Therefore, given the relevance attributed to influence in the political arena as a means of enhancing and shaping the social impact of a research, this section used these pathways to conduct a case study analysis, delineated in the fifth and final article of this thesis.

Article 5: Pathways for the social impact of research in Barcelona's tourism policy

Viana-Lora, A., & Nel-lo-Andreu, M. (2023). Pathways for the social impact of research in Barcelona's tourism policy. *International Journal of Tourism Cities*, 9(2), 481-495. DOI: 10.1108/IJTC-07-2022-0171

Abstract

Purpose

This article aims to analyse Barcelona City Council's tourism policy documents in order to detect how, through the influence of research, different pathways are produced to achieve social impact.

Design/methodology/approach

Using the case study approach, a qualitative content analysis is applied to review 31 tourism policy documents of Barcelona City Council.

Findings

The results show that the influence of tourism research on Barcelona City Council's policy documents occurs through the following pathways that drive potential social impact: the development of shared research programmes, joint projects, the creation of information exchange platforms, support for academia, the creation of debates, the founding of institutes, the referencing of scientific articles, and studies commissioned directly by the City Council from higher education bodies for implementation in the city.

Originality/value

The originality of this article is to highlight the social relevance of research and to contribute to raising awareness among researchers. The social impact of research is an under-explored topic in the field of tourism. Moreover, there is little research that conducts this analysis through policy documents.

Keywords: tourism, Social impact of research, Assessment, Policy, Barcelona

4.2.1. Introduction

Originally, scientific impact was positioned as the most effective way to identify the highest quality research (Reale et a., 2018), directly linking scientific quality with social benefits

(Bornmann, 2013). This relationship is not always the case, with high quality scientific research that has not produced benefits for society (Bornmann, 2012; Smith, 2001) and even a moderate negative correlation between societal output and scientific impact (Van der Weijden, Verbree and Van Den Besselaar, 2012).

Science has evolved from a theoretical-centred perspective to the pursuit of applied research (Hill, 2016). In this new era of science, the focus is on research that solves societal questions of interest (Lauronen, 2020) and whose application produces changes in society (Samuel and Derrick, 2015). The social impact of research has therefore become the great challenge for academics (Lauronen, 2020). Interest in this relatively new concept is just over a decade old (Viana-Lora and Nel-lo-Andreu, 2021). Flecha (2018) identifies this impact as the change that has occurred in society following the publication and transfer of research results. These changes are the result of the efforts made by researchers (Spaapen and Van Drooge, 2011). For Reale et al. (2018) it is the transfer of the research result to a concrete policy.

The establishment of social criteria in research funding calls can contribute to the achievement of minimum social objectives (Cunha et al., 2012) and to researchers' efforts to identify social issues in their research proposals. It is an opportunity to raise researchers' awareness of the importance of social impact (Lima and Wood, 2014; Lauronen, 2020). Social goals can be set in line with the Sustainable Development Goals (SDGs) set by the UN (Viana-Lora and Nel-lo-Andreu, 2020). These goals identify global social problems and by addressing them at the outset of the research, the social purpose of the proposal is clarified (Spaapen and Van Drooge, 2011).

The interest in research that generates social benefits in turn motivates the search for a system of evaluation of science that detects its social impact (Lauronen, 2020). This evaluation is understood as the tool that identifies the social consequences of planned interventions produced after the development of

research (Vanclay, 2003; Ahmadvand and Karami, 2017). Funding agencies are the main stakeholders in this evaluation, as they seek to justify how money spent on research improves people's lives (Holbrook and Frodeman, 2011).

The limitations in assessing the social impact of research found in the literature (Viana-Lora and Nel-lo-Andreu, 2021) invite further research on this topic. To the authors' knowledge, there is no article that evaluates the social impact of research on local tourism policy. Therefore, this article aims to analyse Barcelona City Council's tourism policy documents in order to detect how the influence of research can produce different pathways of achieving social impact. It is important to analyse the influence of research on public tourism policies because never before in history has there been such an important tourism development. Tourism not only generates positive impacts, it also creates conflicts and negative externalities on the local population and the environment, so cities need to take action. One of the key challenges of urban tourism governance is balancing the needs of different stakeholders (Romão, Domènech, Nijkamp, 2021). Barcelona is a perfect city to use as a case study for the search for a governance model for urban tourism management that involves stakeholders (Romão, Domènech, Nijkamp, 2021). To achieve effective governance in urban tourism, it is essential to establish a collaborative and participatory decision-making process. This process should involve a variety of stakeholders, including representatives from the tourism industry, local residents, government entities, and community organizations (Wray, 2013). The stakeholders should be involved in identifying the challenges and opportunities of tourism in the destination, as well as in the development of strategies to address these issues (Lalicic and Önder, 2018). Higher education institutions can play a key role in this governance, as they have the capacity to provide expertise, conduct research and establish partnerships with the various stakeholders in the city's tourism development (Jamal and Getz, 1995). Researchers can produce knowledge and critically analyse the challenges and opportunities in urban tourism management (Ashworth and

Page, 2011). This research can provide valuable information to policy makers and tourism industry stakeholders on best practices, innovative strategies and solutions to existing problems. The rest of the paper is structured as follows. Section 2 conducts a literature review on the social impact of research in policy documents. Section 3 explains the method used in the analysis. Section 4 shows the results obtained. Section 5 provides a discussion of the study. Section 6 explains the conclusions of the study.

4.2.2. Literature Review: The Social Impact of Research in Policy Papers

Urban tourism destination governance has evolved significantly over the last decades. Previously, the management of urban tourism was the responsibility of local governments and tourism authorities, which focused mainly on tourism promotion and infrastructure development, today, the governance of urban tourism destinations has become more complex and multifaceted (Iovitu, Radulescu and Dociu, 2013; Blázquez-Salom et al., 2019). The main actors involved in urban tourism management include not only local governments and tourism authorities, but also tourism businesses, higher education institutions, non-profit organisations, local residents and tourists (Romão, Domènech, Nijkamp, 2021). This governance has become more oriented towards sustainability and citizen participation (Timur and Getz, 2008). Urban planning strategies that seek to balance the needs and desires of tourists and local residents have been implemented, and responsible tourism practices that minimise the environmental and socio-economic impact of tourism have been adopted (Meadowcroft, 2004). While there are challenges to the involvement of universities in the governance of urban tourism, their contributions are essential to ensuring sustainable and responsible development of this important economic activity. One planning tool for destination managers is the implementation of policies. It is necessary to detect how policy makers use scientific evidence to address social problems (Reale et al., 2018) and how research influences those policies. There is no single way to benefit society through research

(Ozanne, Davis and Ekpo, 2022). It is interesting to identify these impact pathways, as they are the ones that researchers should take to enhance the social impact of their research (Muhonen, Benneworth and Olmos-Peñuela, 2020).

The contribution of research to policy is found at all scales; local, regional, national or European (Cunha et al., 2012), through policy development or review (Bornmann, 2012; Alla et al., 2017; Chams, Guesmi and Gil, 2020; Sigurðarson, 2020), the generation of policy briefs or treatment guidelines (De Jong et al., 2014; Ozanne et al., 2017), the creation of policy committees (Smith, 2001; Ozanne et al., 2017), public debates (Bornmann, 2012) or the foundation of networks of policy makers (Ozanne et al., 2017).

The European Union has shown interest in research that generates this type of impact and has added the contribution of research to EU policies as an impact to be taken into account in research funding since its Fifth Framework Programme (FP5) (Holbrook & Frodeman, 2011; Bornmann, 2013). Other bodies, such as the Research Excellence Framework (REF), which is responsible for assessing UK research, identify the impacts of research on policy and guidelines through scientific citations in policy documents (Hanna et al., 2020). These citations are an interesting source of data and show the research-policy relationship (Bornmann, Haunschild and Marx, 2016).

This impact could be direct (Alla et al., 2017; Van der Weijden, Verbree and Van Den Besselaar, 2012), as is the case for research that, motivated by the resolution of social problems, seeks to formulate policies and measures that solve these problems (Tellado, Lepori and Morla-Folch, 2020). An example would be the research on Judith Butler's gender performativity theory, which sought political, legal and social recognition of LGBTQ+ people and managed to impact policies and organisations, influencing the development of laws on LGBTQ+ rights (Fotaki, 2021). This impact could also be indirect (Alla et al., 2017; Van der Weijden, Verbree and Van Den Besselaar, 2012), where there has been a social impact that was not

intended as a research objective, but has occurred as a by-product of the research. In the research by Chams, Guesmi and Gil (2020) assessing the social impact of research on rice cultivation in the Ebro Delta (Spain) and identifying four national decrees and one European law derived from research on the subject, it is observed how indirectly the cost of processing and the value of by-products in the different stages of rice processing have been modified.

Other research on the social impact of science has also focused on assessing the policy environment. Molas-Gallart and Tang (2011) measured the social impact of BRASS, a research centre at Cardiff University, and detected assemblies, recommendations and policy implementation on low carbon and ecological footprint. Esko and Tuunainen (2019) evaluated the impact of a Finnish research group and demonstrated how researchers created opportunities to alter the understanding of regional differentiation in the city of Helsinki, contributing to urban policy change in the city. Bornmann, Haunschild and Marx (2016) analyse the impact of climate change research in policy documents extracted from the Dimensions database and find that only 1.2% of the documents feature mentions of scientific articles. This lack of research citations in policy documents is also detected by Tonetti (2019) in the field of oral health. Kale et al. (2017) seek to predict the likelihood of an article being cited in public policy through the use of Random Forest Classification.

Analysing the social impact of tourism research is more complex than in other fields of study because the particularities of the tourism industry make knowledge sharing more difficult. It is a highly fragmented seasonal sector with a greater presence of small businesses (Cooper, 2015), so tourism research has not focused on practice-based research and knowledge sharing (Duxbury, Bakas and Pato de Carvalho, 2021). Researchers focus on writing scientific articles which does not seem to be the most appropriate means of transferring knowledge to policy makers (Duxbury, Bakas and Pato de Carvalho, 2021). City-university collaboration is

necessary to strengthen city tourism through the skills and resources of the university (Silinevica, 2015). This collaboration is based on a dialogue process that will involve the population and enriches the opinions of stakeholders (Muhonen, Benneworth and Olmos-Peñuela, 2020). Thus, the university will not only work as a knowledge generator, but as a project partner in which all stakeholders are involved (Olsson et al., 2020). City-university collaboration creates bridges for knowledge transfer and develops links to build shared knowledge bases (Muhonen, Benneworth and Olmos-Peñuela, 2020). This article aims to address this research gap and raise awareness among tourism researchers of the importance of generating societal benefits through science and its application in policy.

4.2.3. Research Design

Study area

This article uses the case study approach, more specifically the city of Barcelona, to analyze the influence of tourism research on policy documents. For the purpose of this analysis, a policy document is understood as any document published by destination managers to develop or inform a tourism policy. Nowadays the case study seems to be the best option to measure the social impact of science (Tahamtan and Bornmann, 2020; De Jong et al., 2014; Bornmann, 2012) and the most widely used (Bornmann and Marx, 2014). This approach is the one used by the REF to evaluate research (Hanna et al., 2020; Sivertsen and Meijer, 2020). The case study allows us to present multiple information with a high degree of complexity (Wilsdon et al., 2015), providing a complete picture of all social impacts (Bornmann, 2013). At the same time it enables its presentation in an appropriate and understandable way for all stakeholders (Bornmann, Haunschild and Adams, 2019).

Barcelona is the capital of the autonomous community of Catalonia, located in northeastern Spain, and is one of the most populated cities in Europe (Camps-Calvet, Langemeyer, Calvet-Mir and Gómez-Baggethun, 2016). In the field of

tourism, Barcelona is considered a benchmark for international tourism, with a strong tourism brand, envied by many destinations (Datzira-Masip and Poluzzi, 2014). It is one of the largest urban tourism destinations in the world (Romão, Domènech, Nijkamp, 2021), with 7.3 million travellers by 2022 (INE, 2022). Its growth has been continuous except for the financial crisis of 2008 (Marine-Roig and Clavé, 2015) and the current COVID-19 health crisis, making it the city with the highest international tourism in Spain (INE, 2022). The economic impact of tourism on the city is unquestionable with a tourist GDP of 12% (Jutglà, 2019). In 2019, it was after Paris the second most visited European city according to accommodation bookings made through Airbnb, Booking, Expedia and TripAdvisor (EUROSTAT, 2021). In addition, Barcelona is the fourth city in the world in terms of congress organisation and the first according to the number of attendees (ICCA, 2020).

The city transport infrastructure is one of the factors which has contributed to the development of the tourism. The port of Barcelona is the second most important port in Europe in terms of cruise calls and the third in terms of embarkation and disembarkation (Vayá et al., 2018). Its airport welcomed more than 50 million passengers in 2019, ranking sixth in Europe in terms of passenger traffic (AENA, 2021). The high-speed train links the city with France (Rico et al., 2019), which is positioned as the main tourist-sending country for Barcelona according to hotel demand in 2021 (Ajuntament de Barcelona, 2021).

Its rich heritage is an attraction for millions of tourists. It has new buildings declared World Heritage Sites (Marine-Roig and Clavé, 2015), the most visited being the Sagrada Familia with 4.7 million visits in 2019 (OTB, 2020). Barcelona also has tourist attractions such as the Boqueria market, which allows tourists to feel like local citizens and identify their identity codes through the consumption of traditional or agricultural products of the city (Dimitrovski and Crespi Vallbona, 2018). The use of the urban environment for tourism generates political debates and social movements against tourist overcrowding (Martins, 2018). Over-tourism has led to social conflicts such as protests

over the lack of affordable housing, the touristification of local neighbourhoods, gentrification and the overcrowding of public spaces, causing effects that affect the quality of life in their neighbourhoods, security, privacy and even local identity (Elorrieta, Cerdan Schwitzguébel and Torres-Delgado, 2022; Garay-Tamajón et al, 2022; Wilson, Garay-Tamajon and Morales-Perez, 2022; Bauza Martorell, 2020; Lambea Llop, 2017; Blázquez-Salom et al., 2019; Richards, Brown and Dilettuso, 2020). To address this issue, more sustainable and responsible planning is required to minimise the negative impact of tourism activity. Barcelona was the first city to regulate short-term rentals, even halting licences in the period from 2015 to 2017 (Wilson, Garay-Tamajon and Morales-Perez, 2022; Lambea Llop, 2017). In order to involve local actors in the planning and management of urban tourism, Barcelona City Council created the Tourism and City Council in 2015 (Romão, Domènech, Nijkamp, 2021). This casuistry motivates the choice of this city as a case study, since there is a need to develop tourism policies to solve this social problem and from our perspective, research plays a fundamental role.

Data collection and data analyis

The social impact of the research is assessed through interviews, surveys, social media, communication methodology and productive interactions (Viana-Lora and Nel-lo-Andreu, 2021). This research used qualitative content analysis to study the documentation as it is considered the most obvious way to highlight the influence of research on tourism policy to date. Furthermore, this technique is used to identify the information of interest within a particular phenomenon and brings a wider range of knowledge to the context of study (Downe-Wamboldt, 1992). It has several benefits such as replicability, analytical flexibility or application at different levels of analysis (Camprubí and Coromina, 2016). This technique has already been successfully tested in policy documents in the field of tourism (Santos-Lacueva, Clavé and Saladié, 2017; Heslinga, Groote and Vanclay, 2018). To increase the reliability of the analysis, all documents were read by two researchers and then pooled to determine the

categories and subcategories of analysis. Content analysis consists of three phases: preparation, organisation and reporting (Elo et al., 2014).

In the preparation phase the unit of analysis is selected and the documents are extracted. In this case study the unit of analysis is the tourism policy of Barcelona City Council. In order to extract the documents, a search for official tourism policy documents of the city of Barcelona was carried out. The city council, advocating transparency in management, makes these documents available to the public on its website. The criteria for inclusion were official policy documents dealing with tourism in Barcelona in the period 2010 to 2022. A total of 31 documents were downloaded for this analysis and are listed in Table 7.

Plan	Year	Document
Strategic Tourism Plan of the city of Barcelona 2010-2015	2010	1. Strategic Tourism Plan of the city of Barcelona. Promotion Area.
		2. Strategic Tourism Plan of the city of Barcelona. Tourism and City Area.
		3. Strategic Tourism Plan of the city of Barcelona. Strategic proposal.
		4. Strategic Tourism Plan of the city of Barcelona. Government measure.
	2013	5. Territorial deconcentration of tourist activity. Government measure.
	2015	6. Barcelona, city and tourism. Dialogue for sustainable tourism.
		7. Barcelona, city and tourism. Annex.
		8. Barcelona, city and tourism. Executive summary.
		9. Promotion of the participatory process on the Barcelona tourism model. Government measure.
		10. Strategic Tourism Plan of the city of Barcelona. Evaluation of the 2010-2015 Action Program
	2016	11. Internal operating regulations of the Tourism and City Council.
Barcelona 2020 strategic tourism plan	2017	12. Barcelona tourist mobility strategy.
		13. Barcelona tourist mobility strategy. Annex 1.
		14. Barcelona tourist mobility strategy. Annex 2.

	15. Barcelona tourist mobility strategy. Annex 3.
	16. Barcelona tourist mobility strategy. Government measure.
	17. Tourism 2020 Barcelona. A collective strategy for sustainable tourism.
	18. Barcelona 2020 Strategic Tourism Plan. Strategic diagnosis.
	19. Strategic Tourism Plan 2020. Action programs.
	20. Strategic Tourism Plan 2020. Executive Summary.
2017	21. Regulation of citizen participation.
2018	22. Territorial Tourism Management Strategy. Government measure.
2019	23. Environmental externalities of tourism in the city of Barcelona.
	24. Environmental externalities of tourism in the city of Barcelona. Executive summary.
	25. Situation, characteristics and effects of work in the tourism sector in the city of Barcelona.
	26. CTiC activity report.
2020	27. Creation of new imaginaries and content to improve mobility and tourism sustainability.
2021	28. Culture and creative industry as a factor in the transformation of the visitor's economy.
	29. Tourism marketing strategy. CTiC presentation.
	30. Tourism marketing strategy. Presentation report EMTDB diagnosis.
2022	31. Evaluation of the 2020 strategic tourism plan.

Table 7: Documents analysed. Own elaboration.

In the organisation phase the information is analysed to determine whether certain themes occur and the data is categorised and coded. The initial analysis involved a thorough reading of the documents with the aim of extracting fragments of the text that were linked to scientific research in tourism. From the data extracted, the main category of social impact pathways was developed, with the following subcategories: A) shared research programme; B) Development of research project; C) Creation of information

platforms; D) Supporting research communities; E) Creation of debates; F) Creation of research institutes; G) Scientific citations; H) Scientific studies commissioned by Barcelona City Council. The documents were re-read to gain a deeper understanding of the documents and to be able to code the information into the established subcategories.

The reporting phase describing the results that form part of the content of the subcategories is presented in the following results section.

4.2.4. Results

In total, including the annexes, 31 policy documents were selected for analysis. The annexes were included because they included relevant information on studies carried out by different universities, the use of surveys or the methodologies used. Documents related to Barcelona's strategic tourism planning were analysed. The documents have been divided according to the two strategic plans that the city has had during the period analysed; the Strategic Tourism Plan for the City of Barcelona 2010-2015 and the Strategic Tourism Plan 2020.

The Strategic Tourism Plan for the City of Barcelona 2010-2015 was presented in 2010 and is the first record of the local government's measures in the field of tourism. With the 2015 horizon, its objective was to improve tourism activity and the fit of tourism in the city with four lines of action; 1. The territorial deconcentration of tourism activity, 2. The new governance of tourism in the framework of the city and its territorial environment, 3. The generation of complicity with society and institutions and 4. The leadership and competitive improvement of the destination and tourism-related activities. Therefore, the documents analysed in this plan are 11, four documents correspond to the General Plan published in 2010, another six documents, published in 2015, deal with the lines of action and the evaluation of the plan from 2016 deals with the functioning of the Tourism and City Council.

In 2017, the Strategic Plan for Tourism 2020 was presented, the purpose of which was to design instruments and mechanisms for new sustainable future scenarios, increasing wealth and guaranteeing a social return. The five areas of application were: 1. Governance, 2. Tourism management, 3. Territorial strategy, 4. Work and business and 5. Promotion and marketing. Documents of the plan are incorporated every year until the publication of its evaluation in 2022. A total of 20 documents were analysed in this plan.

This study found a university collaboration in the city's tourism planning, which seeks to design a more sustainable urban tourism that avoids the problems derived from tourism and its gentrification. The commitment to involve all the agents involved in Barcelona's tourism activity favours "urban co-governance". This terminology advocates a new collaborative multi-stakeholder governance, where cooperation is the key to effective integration (Ye and Liu, 2020). This research has allowed us to detect the existing pathways between the university and Barcelona City Council to achieve social impact. To clarify the results, Table 8 shows the documents analysed and their linkage to each of the eight social impact pathways identified: 1. Creation of shared research programmes, 2. Development of research projects, 3. Creation of information platforms, 4. Support to research communities, 5. Organisation of and participation in discussion days, 6. Establishment of research institutes, 7. citations of scientific articles in policy documents and 8. studies commissioned by the municipality from academic institutions for tourism policy development. The results of this analysis are structured according to these findings.

PLAN	YEAR	DOCUMENT	PATHWAYS FOR THE SOCIAL IMPACT OF RESEARCH							
			A	B	C	D	E	F	G	H
STRATEGIC TOURISM PLAN OF THE CITY OF BARCELONA 2010-2015	2010	1								
		2			x			x		
		3			x					x
		4			x					x
	2013	5								
	2015	6								
		7								
		8								
		9								
		10			x	x	x	x		
	2016	11								
BARCELONA 2020 STRATEGIC TOURISM PLAN	2017	12								x
		13								
		14								
		15								
		16								
		17		x			x			x
		18	x							x
		19	x			x				
		20								
	2017	21								
	2018	22								
	2019	23							x	
		24								
		25							x	
		26								
	2020	27								
	2021	28					x			
		29							x	
		30								
	2022	31								x

Table 8: Results of the study. Note(s): A: Shared research programme; B: Development of research project; C: Creation of information platforms; D: Supporting research communities; E: Creation of debates; F: Creation of research institutes; G: Scientific citations; H: Scientific studies commissioned by Barcelona City Council. Source(s): Authors' own elaboration.

Pathways for the social impact of research

Collaboration between academia and stakeholders is a way to achieve social impact. Barcelona City Council maintains collaborations with high-level academic institutions. This section seeks to synthesise these relationships, which will be key to the development of research that will subsequently benefit society. After analysing the documents, it is clear that the city council is interested in deepening its knowledge of university centres in order to support tourism policies. DOC 18 and 19 seek to strengthen the links between university centres and the Administration in order to enjoy a greater transfer of knowledge in the field of tourism. The latter document also refers to the creation of a **shared research programme** (university-city council) to generate and transfer knowledge that will enable the development of methodological tools and seek joint funding channels for projects that address integrated destination management.

DOC 17 highlights the need to address the strategic challenges of the destination in conjunction with university and R&D&I centres. In this same document and in DOC 18, the **implementation of a project** by the university to count tourists staying in tourist accommodation is reflected.

The **creation of information platforms** is another avenue for collaboration. With the aim of promoting a space that constantly fosters applied research, the capacity to innovate, technology transfer and the dissemination of knowledge, it is proposed, as reflected in DOC 10, the creation of a tourism observatory for the city of Barcelona, a tourism innovation centre and a tourism knowledge portal, with the participation of university centres and research groups. DOCs 2, 3 and 4 already included the intention to create such a tourism innovation centre and DOC 2 mentions the knowledge portal.

DOC 10 and 19 reflect the **support for the RIS3CAT Tourism community**, in which several universities participate, based on innovation to transfer knowledge between universities and companies. The University-city council relationship is also

strengthened by promoting research grants and creating tourism chairs (DOC 10).

The **creation of debates** is another form of collaboration, in DOC 28 the city council organises a Debate Forum with four Catalan universities as participants. It was developed as a collaborative process to establish possible strategies for the city. Taking into account the opinion of the researchers, 12 lines of action were proposed to create new tourist content and redefine tourism in the city. DOC 10 also includes the participation and generation in various forums on tourism in the academic sphere, such as the conference "Destination Barcelona: history of tourism in the city" with speakers from the universities of Girona, Barcelona, Cardiff (UK), San Sebastián (Chile), Oberta de Catalunya, the Polytechnic of Catalonia and the University School of Maresme. An open day was organised at DOC 17 with a speaker from the University City of London (UK).

The **creation of research institutes** can be a tool that allows constant and fluid collaboration between the city council and the university, DOC 2 hosts the creation of the Tourism Institute of Catalonia (IRTUCA) with the collaboration of several universities. This will make it possible to establish a framework for the promotion, leadership and coordination of study, research and the generation of knowledge applied to tourism activity, with the corresponding transfer of technology to companies and territories. DOC 10, the Barcelona Municipal Universities Advisory Council, was also created to strengthen ties between the university and the private sector.

Citations to scientific policy documents have also been considered as an indicator of the social impact of research. The analysis of the policy documents has made it possible to extract **references to scientific articles** on tourism. Of the 31 documents studied, 3 mention research articles on tourism:

DOC 23 deals with the environmental externalities of tourism in Barcelona, so the most referenced topics are linked to the carrying capacity of the destination, the environmental

impact of tourism activity and cruise tourism. They use this scientific research to understand the impact of the tourism industry on the city and to develop tools to compensate for the externalities of tourism.

DOC 25 is a scientific work commissioned by the city council. It is a study that evaluates work in the tourism sector in Barcelona, developed by the Universitat Pompeu Fabra. It is a document used for the city's tourism policy, but produced by an academic institution. Therefore, it cites various research on tourism employment related to gender equality, subcontracting or job insecurity. It shows recommendations for the improvement of the city's sector that should later be implemented by the city government.

DOC 29 gives a presentation on Barcelona's tourism marketing strategy and quotes a tourism researcher from the University of Manchester.

The use in policy documents of **studies commissioned by Barcelona City Council from university research groups** specialising in tourism is another path of achieving social impact through research. These studies make a fundamental contribution to the understanding and knowledge of tourism in Barcelona. DOC 3 and 4 include the study of the economic impact of tourist activity in the city of Barcelona carried out by the University of Barcelona between 2007 and 2009, which made it possible to quantify this impact and its effects on the metropolitan area, taking the results into consideration in the strategic plan. The University of Girona carried out a similar study, DOC 12, 17 and 18, but for 2013. In DOC 31, the University of Barcelona was commissioned to carry out a study to quantify the impact of tourism on Barcelona's municipal budget. This same university has also produced reports, DOC 3, such as the feasibility report for a congress held in the city dedicated to urban tourism.

4.2.5. Discussion

Universities are embracing transformative change to work with their communities to create real social impact (Morawska-

Jancelewicz, 2021). The collaboration will be the first step that will start from a previous planning in which the social objectives will be established. In this case study, the university-city council collaboration seeks a scientific contribution to achieve the objectives set out in Barcelona's tourism planning strategy. As a result of these collaborations, the analysis detected eight pathways of social impact. The implementation of joint projects, institutes or research programmes allows the City Council to expose the social problems detected in tourism management and the researchers to design socially relevant scientific solutions. In addition, researchers will be able to participate in tourism policy development committees and provide scientific advice on tourism.

The research results developed through these collaborations and subsequently applied in tourism planning strategies is what we understand as the social impact of the research. This knowledge is used by the City Council to design the city's tourism policy.

This article finds out how public policy responds to conflicts arising from urban tourism with the help of research. We have seen in the DOC 23 study how they seek to detect the externalities of tourism activity and provide tools to mitigate them through the support of scientific research. Citation of scientific papers in policy is considered an indicator to assess the social impact of research (Bornmann, Haunschild and Marx, 2016), in this study it has been considered a way to achieve social impact, as citing an article in policy is not a benefit to society, but it does have a potential social impact. The cited articles have a clear influence on the design of the city's tourism strategy. DOC 25 also uses citations of scientific articles to cover the work and business action line of the 2020 tourism strategic plan. This is a clear example of writing scientific content for policy development. We also find studies commissioned from the university that will make it possible to analyse Barcelona's tourism situation and serve as a support or reference in the tourism strategy.

The Barcelona City Council seeks the involvement of the local population in the management of urban tourism, thus betting on a quadruple helix model that favours dialogue and increases the values of society, its inclusion and democratisation (Morawska-Jancelewicz, 2021). This collaboration and participation of citizens in the research process allows the different points of view involved to be considered, decentralising academic knowledge (Olsson et al., 2020). Spaapen and Van Drooge (2011) found that these interactions between researchers and stakeholders are a precondition for the social impact of research. Therefore, efforts should be made to strengthen the relationship between academia, policy makers and stakeholders. However, the study detects a certain dysfunction between urban tourism research and public policy, perhaps due to a lack of follow-up of city studies by policy makers and a lack of action or recommendations by researchers. City tourism research should seek alternative approaches that are more sustainable and socially equitable.

4.2.6. Conclusion

The article assumes the relevance of tourism research for tourism policy development. Aiello et al. (2021) consider the achievement of policy impact as a strategy to promote the social impact of research. In this context, the influence of research on the tourism strategy documents of the city of Barcelona is analyzed. The pathways to achieve social impact are highlighted with clear examples of university-city council collaboration that can be applied in other organisations.

This article highlights the importance of research for the advancement and improvement of society. But in order to do so, researchers need to be aware of the channels that generate social impact in order to plan their research. This study has attempted to contribute knowledge in this field, which is currently so important and, at the same time, little explored. It proposes a move towards urban co-governance that involves all stakeholders and supports a quadruple helix model of urban tourism. The influence of policy research has

been shown to have a real social impact, its application brings benefits to society (Fotaki, 2021; Chams, Guesmi and Gil, 2020). It is true that the field of study of tourism has certain special characteristics as a changing activity involving a multitude of stakeholders (Akama, 2002). But joint work between science, government and stakeholders, a process of co-creation, is necessary to improve public policies and give social value to research (Redondo-Sama et al., 2020). Research should generate solutions that are more practically applicable and easier to implement, which help in the management of tourism in cities through policy (Dredge and Jamal, 2015). While awaiting a new tourism plan for the city of Barcelona, this study invites university-city council collaboration for its design and implementation, aligning research with the needs of the city and favouring the transfer of knowledge to society.

This study has been carried out by analysing the tourism policy documents of a specific city, Barcelona, this limitation makes it impossible to compare with other cities due to the complexity related to the social impact, the singularity of each case study and the particularities of the tourism industry. Moreover, the city of Barcelona has certain competences in terms of tourism regulation, but this might not be the case in cities in other countries. Future research could aim to overcome this limitation, applying the same methodology in different cities and seeking to strengthen and broaden the pathways to generate social impact.

Theoretical implications

In terms of theoretical implications, this article provides a more comprehensive and in-depth understanding of the pathways to generate social impact with tourism research in the policy of the city of Barcelona. The case study approach allows for presenting information with a high degree of complexity, and the use of qualitative content analysis technique enables the identification of relevant information within a particular phenomenon and contributes extensive knowledge to the study context. The research results can inform decision-making and planning of tourism policies at the local, regional, and

national level, but theoretical research such as that proposed in this study is necessary to determine the pathways that researchers should undertake for their knowledge to be transferred adequately and applied to produce benefits in society.

Practical implications

This study presents several practical implications for destination managers and tourism policy makers in Barcelona and other cities. Research can influence decision-making and tourism policy planning, which can help destination managers make more informed and evidence-based decisions. The study suggests that collaboration between researchers and policy makers is essential to maximize the impact of research on tourism policy. Policy makers can use research findings to design more effective and targeted tourism policies, while researchers can benefit from feedback from policy makers to adjust their research and make it more relevant to the needs of the tourism destination. Additionally, the importance of effective knowledge transfer between researchers and policy makers is highlighted. To achieve significant impact on tourism policy, it is essential that research findings are communicated effectively and presented in a way that is clear and understandable to policy makers. This may involve the creation of specific knowledge transfer materials and tools, such as reports, executive summaries, and presentations.

5. DISCUSSION AND CONCLUSION

This chapter is dedicated to the discussion of the results derived from the thesis and the five articles that compose it. To this end, the research questions posed in the first chapter are answered, a reflection on the contribution of the thesis is made, the main conclusions are highlighted, and the limitations and future lines of research that still need to be addressed are presented.

5.1 Research questions

- Is tourism a subject of study in the evaluation of the social impact of research?

The evaluation of the social impact of research in the context of tourism represents an area of study that is still insufficiently explored and addressed in depth. Although tourism is a significant driving force in many economies and societies around the world, the attention given to the social dimension of its research-derived impact has been limited compared to other aspects. While numerous efforts have been made to analyze and quantify the positive and negative effects inherent in the tourism industry itself, the systematic evaluation of how scientific research in this field can translate into tangible improvements in people's daily lives has been an underexplored area. Thus, this first research question could be answered in the negative.

This gap in knowledge underlines the importance of the present thesis, which focuses on filling this gap and highlighting the need to make tourism researchers aware of the relevance of carefully considering and evaluating the social impacts of their research. Likewise, the need to value scientific research in tourism implies recognizing and highlighting the importance of addressing issues not only from an economic perspective, but also from a social and cultural perspective. This implies considering how the results of science can help in the identification of best practices for tourism planning and management, the promotion of community participation and decision-making at different stages of the tourism development process, and the generation of knowledge that

fosters cultural respect and mutual understanding among the different groups involved in tourism.

- What tools and methods exist for measuring the social impact of research?

In the field of social impact assessment of research, several tools and methods have been developed and have been thoroughly analyzed in the components of this thesis. In particular, alternative metrics have emerged as a valuable contribution in the scientific literature, based on tangible indicators that provide a score of the attention a research receives in social media. These metrics, while proving to be widely used, play a complementary role to traditional citation indexes in assessing research impact. It is important to note that these alternative metrics tend to capture more the dimension of visibility and popularity in the scientific community and in academic circles, which provides insight into the resonance of the work among peers and the research community. However, it is relevant to underline that, although these metrics provide clues about social participation and may, to some extent, reflect the popularity of researchers, their ability to reveal the real impact of research on society as a whole is limited.

To further understand this impact, it is essential to explore more in-depth and contextualized approaches, such as case studies. These approaches, which have been successfully adopted in initiatives such as the Research Excellence Framework (REF), focus on specific research or projects, allowing for a thorough analysis of the various casuistries involved. Despite the richness that case studies can bring to social impact assessment, it is crucial to recognize that their implementation entails a high effort in terms of time and resources. The results obtained from these detailed analyses are often presented in reports that highlight the concrete benefits of the research. However, this approach also raises ethical issues, as the selection of cases and interpretation of results may be influenced by personal and professional values,

highlighting the importance of addressing these issues in a transparent and rigorous manner.

In addition, another promising strategy for measuring social impact is to analyze the interaction between researchers and stakeholders, public and private agents or actors, and local communities. Although this approach can provide valuable information on how research is translating into concrete actions that benefit society, it is necessary to recognize that the interpretation of this interaction can be subjective and subject to individual biases. In addition, some impacts may not be easily quantifiable, highlighting the need to consider qualitative and quantitative approaches in tandem to obtain a complete picture of societal impact.

- How can a comprehensive methodological framework for assessing the social impact of tourism research be developed and what dimensions and areas should be considered?

Given the intrinsic limitations that are perceived in the proposals for evaluation tools previously described, the development of a comprehensive framework that cements rigorous and multidimensional approaches, encompassing both quantitative and qualitative data, emerges as an option of notable relevance. This framework is proposed not only as an evaluative platform, but as a structure that captures the context in its entirety and adheres to participatory evaluation approaches, combining the perspectives of diverse stakeholders.

Chapter 3 advances the creation of a methodology for assessing the social impact of tourism research. In this effort, a reconciliation between the objectives and scope of the research is pursued in order to adapt both the system and the relevant dimensions and indicators.

It should be emphasized that impact remains a phenomenon that goes beyond the immediate and direct framework, which is why we have considered four dimensions of analysis: applied dimension, temporal dimension, geographic dimension and sustainability dimension, which, in the context of the tourism

sphere, are of particular importance and should be considered in all phases of the research.

The applied dimension seeks to differentiate the nature of the impact, distinguishing between that which derives directly and immediately and that which emanates indirectly, perhaps through subsidiary research originating from collaboration among researchers. On the temporal level, the impact is categorized in terms of its duration, in the short or long term. At the geographic level, impact is associated as local, when it occurs in the same epicenter of the research, or else, it is deployed on an extended scale, transcending the original scope. Finally, the sustainability dimension revolves around the synchronization of impact with the precepts and objectives outlined by the Sustainable Development Agenda (SDG).

The evaluative tools proposed in this framework are interwoven from a set of techniques and methodologies, ranging from an exhaustive stakeholder analysis in the preliminary phase of the research, to the evaluation of productive interactions and the application of a communicative methodology at an intermediate stage. This process is repeated, again encompassing the assessment of productive interactions and communicative application, including a conclusive case study report and an evaluation of alternative metrics in the final phase.

Due to the interdisciplinary nature of the field of study, the areas of analysis that will contain the indicators necessary for the evaluation will vary according to the research. Therefore, it becomes indispensable to customize and adjust the approach according to the peculiarities inherent to each study. In the context of the analysis of tourism mobility, areas such as communication and promotion, policy and regulation, economic benefit, new technologies, environment and social improvements are considered. Indicators will be adapted to each project. Data will be collected through surveys, interviews, analysis of existing documents and statistics. The participation of local stakeholders, such as the community, indigenous entrepreneurs and authorities, will be maintained

throughout the process to capture invaluable insights. This will be followed by data processing and analysis using quantitative and qualitative methods as appropriate. Subsequently, the evaluation of the results will be carried out in correlation with the established objectives and the local context, outlining how the tourism research has affected the different social facets. The presentation of the results should be clearly stated and accessible to a diverse audience, including researchers, policy makers, local stakeholders and the community at large to facilitate knowledge transfer. Constant feedback and adaptation allow the methodology to evolve with advances in the understanding of social impacts and the changing needs of the evolving society.

- Is there a direct relationship between the social impact of research and scientific impact?

Article 2 highlighted a direct and positive link between scientific impact, assessed through citations, and social impact in social media, quantified by the altimetric indicator AAS. However, an intrinsic complexity arises when attributing to this indicator the concrete value of contributing to the welfare of society, as previously discussed.

Scientific impact refers to the quality and relevance of research in academia, while societal impact refers to the benefits and improvements that research produces in society. It is crucial to recognize that scientific excellence does not always automatically translate into substantial societal benefits. It is therefore necessary to evaluate and measure both the scientific impact and the social impact of research independently.

The quantification of scientific impact tends to be based on numerical indicators that make it possible to evaluate, for example, the number of citations received by an article or the relative relevance within a field of research. In contrast, the measurement of social impact tends to cover qualitative or mixed characteristics, requiring more holistic approaches to understand its scope and significance. The comparison

between these two types of impact is complicated by the diversity related to measurement and evaluation approaches.

Rather than focusing on the search for a relationship between the two impacts, funders should prioritize investment in research with an explicit focus on generating social impact, without relying exclusively on its qualification in academic terms. While it is true that there has been a progressive recognition of this perspective in funding calls, there is still a pending aspect related to the clear definition of guidelines and criteria to guide the evaluation of this research with social impact. Determining how to evaluate, at the end of the process, whether a research has indeed benefited society remains a challenge to be addressed in a comprehensive manner.

- How can the social impact of tourism research be enhanced (impact pathways)?

Boosting the social impact of research is a fundamental pillar in contemporary science, as it ensures that the knowledge generated is not only an academic exercise, but also has tangible applications in improving the quality of life of people and solving social challenges. In this sense, the identification of real problems faced by society is essential to guide research in the right direction. Interdisciplinary research plays a crucial role in this process, as many of today's challenges cannot be addressed from a single perspective. The intersection between disciplines offers a holistic approach to understanding and solving complex issues arising from tourism activity.

The proposed pathways to enhance impact put forward in this thesis are extremely valuable and of real utility. Broadening collaboration with stakeholders not only ensures that research is relevant, but also fosters innovation through synergy between different perspectives. This collaboration ensures that research is relevant and applicable, and can even lead to co-creation of projects, where academic knowledge is combined with practical experience to develop more effective and sustainable solutions. For example, when addressing tourism, collaboration with tourism companies and

sustainability experts can lead to the design of practices that are more responsible and respectful with the environment and local cultures.

Training and knowledge transfer are key tools to ensure that the solutions and recommendations developed are effectively adopted in practice. Training of professionals in the tourism industry can be an important vehicle for the successful implementation of research results. In addition, dissemination of research results is equally essential to maximize their impact. Effective communication through various media, such as scientific publications, conference presentations, and popular media, allows reaching a wider and more diverse audience. Translating technical language into understandable terms to the general public is a major challenge, but essential to ensure that people who can benefit from these results can understand and apply them.

5.2 Contribution and theoretical and practical implications derived from the thesis

This thesis contributes to the body of knowledge on the social impact of tourism research, an area that has been little studied so far. The research itinerary followed is a solid basis to corroborate the initial hypothesis that the planning, monitoring and evaluation of tourism research generates benefits for society. With certainty, it can be affirmed that it is essential to integrate the consideration of social impact from the earliest stages of the research process, in order to effectively channel all resources and efforts towards the materialization of results that transcend the scientific sphere and have a direct impact on society. Through a comprehensive literature review, it identifies key issues, challenges and implications of assessing and measuring the social impact of research and the limitations of contributing social benefits to science. It also highlights relevant characteristics and findings related to the presence of research in social networks, the influence of research in public policy documents and the relationship between scientific and social impact, highlighting the importance of considering real social problems when

proposing research. It identifies gaps in research and proposes possible approaches to improve the generation of social benefits in research. Furthermore, this thesis contributes scientifically to the understanding of how social benefits can be generated in the tourism industry, through the application of research, with the design of a comprehensive and novel methodological framework for assessing the social impact of tourism research. The case study analyzed validates the proposed framework and emphasizes the importance of measuring and demonstrating the social impact of tourism research. The pathways to enhance impact identified in this thesis seek to create awareness among researchers in the field of tourism, showing the social relevance that their research can achieve if they focus their efforts on achieving benefits for society. Therefore, the theoretical research proposed in this study is necessary for the researchers' knowledge to be transferred and applied appropriately to produce benefits in society.

This thesis also has practical implications. Researchers should consider strategies to increase the visibility of their research. To this end, it provides tourism researchers with a guide to identify possible ways to generate social impact and the possibility of using existing impact cases as a reference for planning their objectives. It also mentions sources that can be used to support that impact. In addition, it provides a useful evaluation tool for tourism researchers to systematize complex information, which can help inform evaluation and measurement practices, being useful for funding agencies.

The results of this thesis can inform and raise awareness among destination managers and tourism policy makers of the value of research in tourism decision-making and planning at local, regional and national levels. Collaboration between researchers and policy makers is essential to maximize the social impact of research, as research findings can be used in the design of more effective and targeted tourism policies, while researchers can benefit from feedback from managers

to adjust their research to make it more relevant to the needs of the destination.

5.3 Limitations and future research

The social impact of research is produced over the years, usually not immediately. This thesis evaluated in article 3 the impact on a specific project that was in a final phase, therefore, the main limitation due to time, in addition to those inherent to this type of evaluations, is not having been able to give a long-term follow-up of a specific tourism research project. In order to solve this casuistry and as future research, it is proposed to continue advancing in the evaluative methodology and test the proposed framework from an initial phase, with an intermediate evaluation, an evaluation at the end of the project and an evaluation at least five years after its completion. The aim is to continue advancing towards an evaluative framework accepted by the scientific community and used in the calls for proposals that grant funding.

This thesis highlights the importance of generating, transferring and applying knowledge in order to produce benefits for society. Therefore, another important aspect to investigate focuses on the transfer of knowledge in the tourism field. It is essential that the findings and knowledge generated are accessible and understandable not only to the academic community, but also to the general public. There is a need for a better understanding of how this knowledge transfer is currently carried out. Investigating and analyzing existing transfer processes between researchers and stakeholders can help identify effective strategies to ensure that research has a real impact or detect problems that may be emerging.

Another line of research that has not been considered in this thesis, and should be addressed in the future, is how researcher ethics influence outcomes. The impact of research is not only determined by the results and findings of the research, but also by the ethics and values that guide researchers in their work. Its importance lies in several reasons. First, researchers have a responsibility to conduct scientific studies ethically, with integrity and rigor to ensure reliability and veracity. If

researchers do not act ethically, the results of their studies may be questioned and their social impact will be negative. Second, ethics in research is also related to transparency and accountability. Researchers have a responsibility to report and communicate clearly and accessibly the results of their studies, as well as to be transparent about their methods and potential conflicts of interest. This allows society to assess the reliability and usefulness of the research, and also helps to prevent misinterpretation or misuse of the results. Third, the consideration of the relevance of the research and the benefits to society is important. Researchers must take into account the needs and priorities of society when choosing their research topics, designing their studies, and defining their objectives. This implies developing research that responds to social problems and challenges, and that can generate real solutions and improvements in people's lives. In addition, building ethical and respectful relationships with the participants and communities involved is essential to ensure that research is inclusive and truly addresses the needs and concerns of society.

5.4 Concluding remarks

This doctoral research seeks to make an innovative and useful contribution to the field of the social impact of tourism research. Through comprehensive data collection and analysis, supported by a solid scientific foundation, the crucial role played by social impact in this field has been substantially highlighted. In fact, the results of this thesis not only seek to generate advanced knowledge, but also to materialize a tangible and significant benefit for society as a whole. This path towards achieving a positive social impact is strengthened by the current successful application of the findings of this research in a project, funded by the Ministry of Science and Innovation of the government of Spain, with direct links to this doctoral thesis, which confirms its potential indirect social impact.

The recognition given to the work carried out in this thesis has been extended to the competitive call for awards for research

with social impact, promoted by the Social Council of the Universitat Rovira i Virgili in 2021. This initiative has been promoted by the university with the aim of making visible and stimulating within the scientific community the profound relevance of the social impact of research. The dynamic interaction between academia and modern society has evolved, establishing a vital bridge between scientific research and social progress. In this sense, the awards granted through this call not only underscore research excellence, but also demonstrate a strong appreciation for efforts dedicated to addressing substantial challenges and generating positive changes in the community. These types of awards, together with the social criteria incorporated in the calls for proposals that fund research, are a sign of the importance of this orientation in research. It is not just about research for the sake of abstract knowledge, but about channeling that knowledge into tangible results that improve the quality of life, promote equity and shape a more sustainable and promising future.

Field work, active participation in congresses and involvement in meetings linked to research articles have allowed us to identify a certain degree of ignorance about this field of study. Unlike disciplines such as the medical sciences, where awareness of social relevance is more deeply rooted, in the field of tourism there is still room for the development and propagation of knowledge about its social impact. In this sense, this thesis has transcended its mere purpose of advancing knowledge and the creation of tools and methodologies, acquiring an active role in sensitizing and raising awareness among researchers about the intrinsic importance of the social impact of their research. Furthermore, this research lays a solid foundation for the effective implementation of this approach in future projects, thus ensuring greater commitment and social responsibility in the tourism research community.

6. REFERENCES

AENA. (2021). *Barcelona en cifras (2021)*. https://www.aena.es/es/aerolineas/aeropuertos-y-destinos/nuestros-aeropuertos/josep-tarradellas-barcelona-el-prat.html (assessed 13 november 2021).

Agencia Estatal de Investigación. (2019). *«Proyectos I+D+i» 2019 - Modalidades «Retos Investigación» y «Generación de Conocimiento»*. https://www.aei.gob.es/convocatorias/buscador-convocatorias/proyectos-idi-2019-modalidades-retos-investigacion-generacion (assessed 17 July 2021).

Ahmadvand, M. and Karami, E. (2017). Social impacts evaluation and insider-outsider paradigm: Floodwater spreading project on the Gareh-Bygone plain as an illustrative case. *Evaluation and program planning, 65*, 69-76.

Aiello, E., Donovan, C., Duque, E., Fabrizio, S., Flecha, R., Holm, P., ... & Reale, E. (2021). Effective strategies that enhance the social impact of social sciences and humanities research. *Evidence & Policy: A Journal of Research, Debate and Practice, 17*(1), 131-146

Ajuntament de Barcelona. (2021). *Estadística i Difusió de Dades*. https://ajuntament.barcelona.cat/estadistica/castella/Estadistiques_per_temes/Turisme_i_promocio_economica/Turisme/Oferta_demanda_hotelera/actual/ta08.htm (accessed on 25 January 2022).

Akama, J. S. (2002). The role of government in the development of tourism in Kenya. *International Journal of Tourism Research, 4*(1), 1-14.

Alla, K., Hall, W. D., Whiteford, H. A., Head, B. W., & Meurk, C. S. (2017). How do we define the policy impact of public health research? A systematic review. *Health Research Policy and Systems, 15* http://dx.doi.org/10.1186/s12961-017-0247-z

Alla, K., Hall, W. D., Whiteford, H. A., Head, B. W., & Meurk, C. S. (2017). Research impact for (mental) health policy. *Health Res Policy Sys, 15*(1).

Allen, L. R., Hafer, H. R., Long, P. T., & Perdue, R. R. (1993). Rural residents' attitudes toward recreation and tourism development. *Journal of travel research, 31*(4), 27-33.

Alonso-Arévalo, J., Cordón-García, J. A., & Maltrás-Barba, B. (2016). Altmetrics: medición de la influencia de los medios en el impacto social de la investigación. *Cuadernos de documentación multimedia*, *27*(1).

Álvarez-Bornstein, B., & Montesi, M. (2019). Who is interacting with researchers on Twitter? A survey in the field of Information Science. *JLIS. it*, *10*(2), 87-106.

Amaratunga, D., Baldry, D., Sarshar, M., & Newton, R. (2002). Quantitative and qualitative research in the built environment: application of "mixed" research approach. *Work study*.

Andereck, K. L. (1995). Environmental consequences of tourism: a review of recent research. *Linking Tourism, the Environment, and Sustainability, edited by Stephen F. McCool and Alan E. Watson*, 77-81.

Andereck, K. L., & Nyaupane, G. P. (2011). Exploring the nature of tourism and quality of life perceptions among residents. *Journal of Travel research, 50*(3), 248-260.

Andereck, K. L., Valentine, K. M., Knopf, R. C., & Vogt, C. A. (2005). Residents' perceptions of community tourism impacts. *Annals of tourism research, 32*(4), 1056-1076.

Ap, J., & Crompton, J. L. (1998). Developing and testing a tourism impact scale. *Journal of travel research, 37*(2), 120-130.

Archambault, É., & Larivière, V. (2009). History of the journal impact factor: Contingencies and consequences. *Scientometrics, 79*(3), 635-649.

Archer, B., & Fletcher, J. (1996). The economic impact of tourism in the Seychelles. *Annals of tourism research, 23*(1), 32-47.

Archer, B., Cooper, C., & Ruhanen, L. (2012). The positive and negative impacts of tourism. In *Global tourism* (pp. 79-102). Routledge.

Ashworth, G., & Page, S. J. (2011). Urban tourism research: Recent progress and current paradoxes. *Tourism management*, *32*(1), 1-15.

Assaf, A. G., Kock, F., & Tsionas, M. (2022). Tourism during and after COVID-19: An expert-informed agenda for future research. *Journal of Travel Research*, *61*(2), 454-457.

Aucamp, I. and Lombard, A. (2018). Can social impact assessment contribute to social development outcomes in an emerging economy? *Impact Assessment and Project Appraisal*, *36*(2), 173-185.

Baggio, R., & Cooper, C. (2010). Knowledge transfer in a tourism destination: the effects of a network structure. *The Service Industries Journal, 30*(10), 1757-1771.

Ball, R., & Tunger, D. (2006). Science indicators revisited–Science Citation Index versus SCOPUS: A bibliometric comparison of both citation databases. *Information Services & Use, 26*(4), 293-301.

Ballantyne, R., Packer, J., & Axelsen, M. (2009). Trends in tourism research. *Annals of Tourism Research, 36*(1), 149-152.

Bandola-Gill, J., & Smith, K. E. (2022). Governing by narratives: REF impact case studies and restrictive storytelling in performance measurement. *Studies in Higher Education, 47*(9), 1857-1871.

Barros, B., Fernandez-Zubieta, A., Fidalgo-Merino, R., & Triguero, F. (2018). Scientific knowledge percolation process and social impact: A case study on the biotechnology and microbiology perceptions on Twitter. *Science and Public Policy*, *45*(6), 804-814.

Bauza Martorell, F. J. (2020). Public Policies of Sustainable Tourism: Brazilian Hispanic Perspective. *Veredas do Direito*, *17*, 11. https://doi.org/10.18623/rvd.v17i39.1726

Bayley, J. E., & Phipps, D. (2019). Building the concept of research impact literacy. *Evidence & Policy, 15*(4), 597-606.

Becker, H. A. (2001). Social impact assessment. *European Journal of Operational Research, 128*(2), 311-321.

Belisle, F. J., & Hoy, D. R. (1980). The perceived impact of tourism by residents a case study in Santa Marta, Colombia. *Annals of tourism research, 7*(1), 83-101.

Benneworth, P., & Olmos-Peñuela, J. (2022). An openness framework for ex ante evaluation of societal impact of research. *Research Evaluation*.

Berg, B. L., & Lune, H. (2001). An introduction to content analysis. *Qualitative research methods for the social sciences*, *7*, 238-267.

Blázquez-Salom, M., Blanco-Romero, A., Vera-Rebollo, F., & Ivars-Baidal, J. (2019). Territorial tourism planning in Spain: from boosterism to tourism degrowth?. *Journal of Sustainable Tourism*, *27*(12), 1764-1785. https://doi.org/10.1080/09669582.2019.1675073

Bollen, J., Van de Sompel, H., Hagberg, A., & Chute, R. (2009). A principal component analysis of 39 scientific impact measures. *PloS one, 4*(6), e6022.

Bonaccorsi, A., Melluso, N., Chiarello, F., & Fantoni, G. (2021). The credibility of research impact statements: A new analysis of REF with Semantic Hypergraphs. *Science and Public Policy, 48*(2), 212-225.

Bornmann, L. (2012). Measuring the societal impact of research: research is less and less assessed on scientific impact alone—we should aim to quantify the increasingly important contributions of science to society. *EMBO reports, 13*(8), 673-676.

Bornmann, L. (2013). What is societal impact of research and how can it be assessed? A literature survey. *Journal of the American Society for information science and technology, 64*(2), 217-233.

Bornmann, L. (2014). Do altmetrics point to the broader impact of research? An overview of benefits and disadvantages of altmetrics. *Journal of informetrics, 8*(4), 895-903.

Bornmann, L. (2015). Usefulness of altmetrics for measuring the broader impact of research: A case study using data from PLOS and F1000Prime. *Aslib J. Inf. Manag., 67*(3), 305-319.

Bornmann, L. and Marx, W. (2014). How should the societal impact of research be generated and measured? A proposal for a simple and practicable approach to allow interdisciplinary comparisons. *Scientometrics, 98*(1), 211-219.

Bornmann, L., & Haunschild, R. (2018). Normalization of zero-inflated data: An empirical analysis of a new indicator family and its use with altmetricsdata. *Journal of Informetrics, 12*(3), 998–1011. http://dx.doi.org/10.1016/j.joi.2018.01.010.

Bornmann, L., Haunschild, R. and Marx, W. (2016). Policy documents as sources for measuring societal impact: how often is climate change research mentioned in policy-related documents? *Scientometrics, 109*(3), 1477-1495.

Bornmann, L., Haunschild, R., & Adams, J. (2019). Do altmetrics assess societal impact in a comparable way to case studies? An empirical test of the convergent validity of altmetrics based on data from the UK research excellence framework (REF). *Journal of informetrics, 13*(1), 325-340.

Boshoff, N., & de Jong, S. P. (2020). Conceptualizing the societal impact of research in terms of elements of logic models: a survey of researchers in sub-Saharan Africa. *Research Evaluation, 29*(1), 48-65.

Boshoff, N., & Esterhuyse, H. (2016). Productive interactions for societal impact: Developing a research information system for agriculture (RIS-Agric) at Stellenbosch University, South Africa. In *21st International Conference on Science and Technology Indicators-STI 2016. Book of Proceedings.*

Bozeman, B., & Sarewitz, D. (2011). Public value mapping and science policy evaluation. *Minerva, 49*(1), 1–23.

Branch, K. (2019). *Guide to social impact assessment: a framework for assessing social change*. Routledge: New York, NY, USA.

Brauer, R. (2018). *What research impact? Tourism and the changing UK research ecosystem*. University of Surrey (United Kingdom).

Brauer, R., & Dymitrow, M. (2020). The Language of sustainable tourism as a proxy indicator of quality. *Sustainability*, *13*(1), 25.

Brauer, R., Dymitrow, M., & Tribe, J. (2019). The impact of tourism research. *Annals of Tourism Research*, *77*, 64-78.

Brook, L. (2018). Evidencing impact from art research: analysis of impact case studies from the REF 2014. *The Journal of Arts Management, Law, and Society*, *48*(1), 57-69.

Brougham, J. E., & Butler, R. W. (1981). A segmentation analysis of resident attitudes to the social impact of tourism. *Annals of tourism research, 8*(4), 569-590.

Burdge, R., Williams, G., Llewellyn, L., Finsterbusch, K., Freudenburg, W., Stoffle, R., Leistritz, L., Wolf, C.P., Trompson, J., Fricke, P., Gramling, R., Petterson, J. and Holden, A. (1995). Guidelines and principles for social impact assessment. *Environmental Impact Assessment Review, 15*(1), 11-43.

Butler, J. S., Kaye, I. D., Sebastian, A. S., Wagner, S. C., Morrissey, P. B., Schroeder, G. D., ... & Vaccaro, A. R. (2017). The evolution of current research impact metrics. *Clinical spine surgery*, *30*(5), 226-228.

Butler, R. (2015). The evolution of tourism and tourism research. *Tourism Recreation Research*, *40*(1), 16-27.

Butler, R. W. (2012). Tourism geographies or geographies of tourism: where the bloody hell are we. *The Routledge handbook of tourism geographies*, 26-34.

Camprubí, R., & Coromina, L. (2016). Content analysis in tourism research. *Tourism Management Perspectives, 18*, 134-140.

Camps-Calvet, M., Langemeyer, J., Calvet-Mir, L., & Gómez-Baggethun, E. (2016). Ecosystem services provided by urban gardens in Barcelona, Spain: Insights for policy and planning. *Environmental Science & Policy, 62*, 14-23.

Çaparlar, C. Ö., & Dönmez, A. (2016). What is scientific research and how can it be done?. *Turkish journal of anaesthesiology and reanimation*, *44*(4), 212.

Chambers, D. (2007). An agenda for cutting-edge research in tourism. *Developments in tourism research*, 233-246.

Chams, N., Guesmi, B. and Gil, J. M. (2020). Beyond scientific contribution: Assessment of the societal impact of research and innovation to build a sustainable agri-food sector. *Journal of environmental management, 264*, 110455.

Chavarro, D., Ràfols, I., & Tang, P. (2018). To what extent is inclusion in the Web of Science an indicator of journal 'quality'? *Research Evaluation, 27*(2), 106-118.

Chen, W. M., Bukhari, M., Cockshull, F., & Galloway, J. (2020). The relationship between citations, downloads and alternative metrics in rheumatology publications: a bibliometric study. *Rheumatology*, *59*(2), 277-280.

Cho, J. (2017). A comparative study of the impact of Korean research articles in four academic fields using altmetrics. *Performance Measurement and Metrics.*

Clarivate Analytics. (n.d.). *ISI Journal Citation Reports*. Available online: Jcr.fecyt.es (accessed on 2 March 2020).

Cohen, E. (1978). The impact of tourism on the physical environment. *Annals of Tourism research, 5*(2), 215-237.

Cooper, C. (2015). Managing tourism knowledge. *Tourism Recreation Research*, *40*(1), 107-119.

Correia, A., & Kozak, M. (2010). Tourism behavior and marketing: An introduction. *Journal of Hospitality Marketing & Management, 19*(3), 199-202.

Corsi, A., Pagani, R. N., Kovaleski, J. L., & Luiz da Silva, V. (2019). Technology transfer for sustainable development: Social impacts depicted and some other answers to a few questions. *Journal of Cleaner Production*, 118522.

COST. (n.d.). *Documents & Guidelines*. https://www.cost.eu/funding/documents-guidelines/ (accessed on 2 November 2022).

Crawford, A. (2020). Societal impact as 'rituals of verification'and the co-production of knowledge. *The British Journal of Criminology, 60*(3), 493-518.

Crotts, J. C., & Holland, S. M. (1993). Objective indicators of the impact of rural tourism development in the state of Florida. *Journal of Sustainable Tourism, 1*(2), 112-120.

Cunha, J., Ferreira, P., Araújo, M. and Ares, E. (2012, April). Social return of R&D investments in manufacturing sector: Some insights from an exploratory case study. In *AIP Conference Proceedings* (Vol. 1431, No. 1, pp. 43-53). American Institute of Physics.

Cuthill, M. (2010). Strengthening the 'social'in sustainable development: Developing a conceptual framework for social sustainability in a rapid urban growth region in Australia. *Sustainable development*, *18*(6), 362-373.

Dalampira, E. S., & Nastis, S. A. (2020). Mapping sustainable development goals: A network analysis framework. *Sustainable Development, 28*(1), 46-55.

Darbellay, F., & Stock, M. (2012). Tourism as complex interdisciplinary research object. *Annals of tourism research*, *39*(1), 441-458.

Dardas, L. A., Woodward, A., Scott, J., Xu, H. and Sawair, F. A. (2019). Measuring the social impact of nursing research: An

insight into altmetrics. *Journal of advanced nursing, 75*(7), 1394-1405.

Datzira-Masip, J., & Poluzzi, A. (2014). Brand architecture management: The case of four tourist destinations in Catalonia. *Journal of Destination Marketing & Management, 3*(1), 48-58.

Davies, F. (2015, May 26). *Numbers behind Numbers: The Altmetric Attention Score and Sources Explained*. Altmetric. https://www.altmetric.com/blog/scoreanddonut/ (accessed on 9 March 2020).

De Jong, S., Barker, K., Cox, D., Sveinsdottir, T. and Van den Besselaar, P. (2014). Understanding societal impact through productive interactions: ICT research as a case. *Research Evaluation, 23*(2), 89-102.

De Silva, P. U. and Vance, C. K. (2017). Assessing the societal impact of scientific research. In *Scientific Scholarly Communication* (pp. 117-132). Springer, Cham, Switzerland.

Deery, M., Jago, L., & Fredline, L. (2012). Rethinking social impacts of tourism research: A new research agenda. *Tourism Management, 33*(1), 64-73.

Delli, K., Livas, C., Spijkervet, F. K. L., & Vissink, A. (2017). Measuring the social impact of dental research: An insight into the most influential articles on the Web. *Oral diseases*, *23*(8), 1155-1161.

Derrick, G. E., & Samuel, G. N. (2016). The evaluation scale: exploring decisions about societal impact in peer review panels. *Minerva, 54*(1), 75-97.

Diedrich, A., & García-Buades, E. (2009). Local perceptions of tourism as indicators of destination decline. *Tourism Management, 30*(4), 512-521.

Dimitrovski, D., & Crespi Vallbona, M. (2018). Urban food markets in the context of a tourist attraction–La Boqueria market in Barcelona, Spain. *Tourism Geographies, 20*(3), 397-417.

Djellal, F., Francoz, D., Gallouj, C., Gallouj, F., & Jacquin, Y. (2003). Revising the definition of research and development in the light of the specificities of services. *Science and public policy, 30*(6), 415-429.

Downe-Wamboldt, B. (1992). Content analysis: method, applications, and issues. *Health care for women international, 13*(3), 313-321.

Doyle, J. (2018). Reconceptualising research impact: reflections on the real-world impact of research in an Australian context. *Higher Education Research & Development, 37*(7), 1366-1379.

Dredge, D., & Jamal, T. (2015). Progress in tourism planning and policy: A post-structural perspective on knowledge production. *Tourism Management, 51*, 285-297.

Duffield, B. S. (1982). Tourism: the measurement of economic and social impact. *Tourism Management, 3*(4), 248-255.

Duque, E., Gairal, R., Molina, S., & Roca, E. (2020). How the psychology of education contributes to research with a social impact on the education of students with special needs: the case of successful educational actions. *Frontiers in psychology, 11*, 439.

Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the content analysis literature in organization studies: Research themes, data sources, and methodological refinements. *Organizational research methods*, *10*(1), 5-34.

Duxbury, N., Bakas, F. E., & Pato de Carvalho, C. (2021). Why is research–practice collaboration so challenging to achieve? A creative tourism experiment. *Tourism Geographies*, *23*(1-2), 318-343.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE open, 4*(1), 2158244014522633.

Elorrieta, B., Cerdan Schwitzguébel, A., & Torres-Delgado, A. (2022). From success to unrest: the social impacts of tourism in

Barcelona. *International Journal of Tourism Cities*, *8*(3), 675-702.

Eschenbach, C. A. (2017). Bridging the gap between observational oceanography and users. *Ocean Science, 13*(1), 161-173.

Esko, T. and Miettinen, R. (2019). Scholarly understanding, mediating artefacts and the social impact of research in the educational sciences. *Research Evaluation, 28*(4), 295-303.

Esko, T., & Tuunainen, J. (2019). Achieving the social impact of science: An analysis of public press debate on urban development. *Science and Public Policy, 46*(3), 404-414.

European Commission. (2015a). *Horizon 2020 indicators, Assessing the Results and Impact of Horizon*. https://ec.europa.eu/newsroom/horizon2020/document.cfm?doc_id=10927 (accessed on 25 March 2020).

European Commission. (2015b). *Seventh framework programme of the European Community for research and technological development including demonstration activities (FP7)*. https://cordis.europa.eu/programme/id/FP7/es (accessed on 25 March 2020).

European Commission. (2020). 2020 LIFE - Call for proposals for Preparatory projects. https://cinea.ec.europa.eu/programmes/life/life-calls-proposals/2020-life-call-proposals-preparatory-projects_en (accessed on 18 September 2020).

European Commission. (2021). *Horizon Europe programme analysis.* https://ec.europa.eu/info/research-and-innovation/strategy/support-policy-making/shaping-eu-research-and-innovation-policy/evaluation-impact-assessment-and-monitoring/horizon-europe_en#monitoring-horizon-europe (accessed on 25 March 2022).

European Commission. (n.d.). *Programming, monitoring and evaluation.* https://single-market-

economy.ec.europa.eu/smes/cosme/programming-monitoring-and-evaluation_en (accessed on 12 February 2022).

EUROSTAT. (2021). Short-stay accommodation offered via online collaborative economy platforms. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Short-stay_accommodation_offered_via_online_collaborative_economy_platforms#In_2019.2C_more_than_1.5_million_tourists_per_night_slept_in_a_bed_booked_via_the_platforms (accessed on 10 March 2022).

Falagas, M. E., Kouranos, V. D., Arencibia-Jorge, R., & Karageorgopoulos, D. E. (2008). Comparison of SCImago journal rank indicator with journal impact factor. *The FASEB journal, 22*(8), 2623-2628.

Farrell, B. H., & Runyan, D. (1991). Ecology and tourism. *Annals of tourism Research, 18*(1), 26-40.

Flecha, G. R. (2018). Evaluación del impacto social de la investigación. *Revista de Fomento Social*, 585-502.

Fletcher, J. E. (1989). Input-output analysis and tourism impact studies. *Annals of tourism research, 16*(4), 514-529.

Fotaki, M. (2020). Feminist research changing organizations and societies: taking stock and looking to the future. *European Journal of Work and Organizational Psychology*, 1-10.

Franklin, A., & Crang, M. (2001). The trouble with tourism and travel theory? *Tourist Studies*, 1(1), 5-22.

French, N. J., Massy, W. F., & Young, K. (2001). Research assessment in Hong Kong. *Higher Education*, 35-46.

Garay-Tamajón, L., Lladós-Masllorens, J., Meseguer-Artola, A., & Morales-Pérez, S. (2022). Analyzing the influence of short-term rental platforms on housing affordability in global urban destination neighborhoods. *Tourism and Hospitality Research, 22*(4), 444-461. https://doi.org/10.1177/14673584211057568

Garcovich, D. and Adobes Martin, M. (2020). Measuring the social impact of research in Paediatric Dentistry: An Altmetric study. *International journal of paediatric dentistry, 30*(1), 66-74.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. sage.

Gil, S. M., Korstanje, M. E., & Peral, P. P. (2020). El turismo como objeto de investigación. *Rosa dos Ventos*, *12*(1), 81-105.

Glover, T. D. (2015). Leisure research for social impact. *Journal of Leisure Research*, *47*(1), 1-14.

Golden, S. A. R. (2017). *Recent Research in Social Sciences & Humanities*. EduPedia Publications Pvt Ltd.

Gómez, A., Elboj, C., & Capllonch, M. (2013). Beyond action research: The communicative methodology of research. *International Review of Qualitative Research, 6*(2), 183-197.

Gómez, A., Padrós, M., Ríos, O., Mara, L. C., & Pukepuke, T. (2019, February). Reaching social impact through communicative methodology. Researching with rather than on vulnerable populations: the Roma case. In *Frontiers in Education* (Vol. 4, p. 9). Frontiers.

Graburn, N.H.H. & Jafari, J. (1991). Tourism social science. *Annals of Tourism Research, 18,* 1-11.

Gunn, A., & Mintrom, M. (2018). Measuring research impact in Australia. *Australian Universities Review, 60*(1), 9-15.

Gursoy, D., & Rutherford, D. G. (2004). Host attitudes toward tourism: An improved structural model. *Annals of tourism Research*, *31*(3), 495-516.

Gursoy, D., Jurowski, C., & Uysal, M. (2002). Resident attitudes: A structural modeling approach. *Annals of tourism research, 29*(1), 79-105.

Hanna, C. R., Gatting, L. P., Boyd, K. A., Robb, K. A. and Jones, R. J. (2020). Evidencing the impact of cancer trials: insights from the 2014 UK Research Excellence Framework. *Trials, 21*, 1-13.

Harzing, A. W., & Alakangas, S. (2016). Google Scholar, Scopus and the Web of Science: a longitudinal and cross-disciplinary comparison. *Scientometrics, 106*(2), 787-804.

Helming, K., Diehl, K., Bach, H., Dilly, O., König, B., Kuhlman, T., ... and Wascher, D. (2011). Ex ante impact assessment of policies affecting land use, Part A: analytical framework. *Ecology and Society, 16*(1).

Heng, T. M., & Low, L. (1990). Economic impact of tourism in Singapore. *Annals of Tourism Research, 17*(2), 246-269.

Heslinga, J., Groote, P., & Vanclay, F. (2018). Understanding the historical institutional context by using content analysis of local policy and planning documents: Assessing the interactions between tourism and landscape on the Island of Terschelling in the Wadden Sea Region. *Tourism Management,* 66, 180-190.

Higgins-Desbiolles, F. (2018). Sustainable tourism: Sustaining tourism or something more?. *Tourism management perspectives*, *25*, 157-160.

Hill, S. (2016). Assessing (for) impact: Future assessment of the societal impact of research. *Palgrave Communications, 2*(1), 1-7.

Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National academy of Sciences, 102*(46), 16569-16572.

Hirsch, J. E., & Buela-Casal, G. (2014). The meaning of the h-index. *International Journal of Clinical and Health Psychology, 14*(2), 161-164.

Holbrook, J. B. and Frodeman, R. (2011). Peer review and the ex ante assessment of societal impacts. *Research Evaluation, 20*(3), 239–246.

Holden, A. (2016). *Environment and tourism*. Routledge.

Holder, J. S. (1988). Pattern and impact of tourism on the environment of the Caribbean. *Tourism management, 9*(2), 119-127.

Hult, M., & Lennung, S. Å. (1980). Towards a definition of action research: a note and bibliography. *Journal of management studies, 17*(2), 241-250.

ICCA. (2020). *ICCA Statistics Report, Country & City Rankings.* http://www.iccaworld.org/dcps/doc.cfm?docid=2396

INE. (2022). Encuesta de ocupación hotelera. Instituto Nacional de Estadística. https://www.ine.es/dynt3/inebase/index.htm?padre=238&capsel=238 (accessed on 4 June 2022).

International Institute for Sustainable Development (IISD). (n. d.). *Línea de tiempo de la EIA*. Available online: https://www.iisd.org/learning/eia/es/eia-essentials/timeline/ (accessed on 4 March 2019).

Iovitu, M., Radulescu, C., & Dociu, M. (2013). Tourism planning in urban areas–Trends, best practices and priorities in Bucharest. *Journal of Knowledge Management, Economics and Information Technology*, *3*(5), 28-42.

Ivanov, S., & Webster, C. (2007). Measuring the impact of tourism on economic growth. *Tourism Economics, 13*(3), 379-388.

Jamal, T. B., & Getz, D. (1995). Collaboration theory and community tourism planning. *Annals of tourism research*, *22*(1), 186-204.

Jamali, H. R., & Alimohammadi, D. (2015). Blog citations as indicators of the societal impact of research: Content analysis of social sciences blogs. *International Journal of Knowledge Content Development & Technology, 5*(1), 15-32.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research, 1*(2), 112-133.

Jurowski, C., Daniels, M., & Pennington-Gray, L. (2006). The distribution of tourism benefits. *Quality tourism experiences*, 192-207.

Jutglà, E. D. (2019). Changing economic territories in the neighbourhoods of Poblenou and sants in Barcelona–the effects of tourism (2005-2016). *Cuadernos de Turismo, 43*, 595-597.

Kale, B., Siravuri, H. V., Alhoori, H., & Papka, M. E. (2017, June). Predicting research that will be cited in policy documents. In *Proceedings of the 2017 ACM on Web Science Conference* (pp. 389-390).

Kelly, D., Kent, B., McMahon, A., Taylor, J., & Traynor, M. (2016). Impact case studies submitted to REF 2014: The hidden impact of nursing research. *Journal of Research in Nursing*, *21*(4), 256-268.

Kent, N. (1971). Escape Mecca of the World. *Hawaii Pono Journal, 1*, 32-58.

Kidd, I. J., Chubb, J., & Forstenzer, J. (2021). Epistemic corruption and the research impact agenda. *Theory and Research in Education, 19*(2), 148-167.

Kim, K., Uysal, M., & Sirgy, M. J. (2013). How does tourism in a community impact the quality of life of community residents?. *Tourism management, 36*, 527-540.

Koens, K., Postma, A., & Papp, B. (2018). Is overtourism overused? Understanding the impact of tourism in a city context. *Sustainability, 10*(12), 4384.

Kolahi, J., & Khazaei, S. (2016). Altmetric: Top 50 dental articles in 2014. *British dental journal*, *220*(11), 569-574.

Kolahi, J., & Khazaei, S. (2018). Altmetric analysis of contemporary dental literature. *British dental journal, 225*(1), 68-72.

Kolbe, R. H., & Burnett, M. S. (1991). Content-analysis research: An examination of applications with directives for improving research reliability and objectivity. *Journal of consumer research*, *18*(2), 243-250.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Kousha, K., Thelwall, M., & Abdoli, M. (2021). Which types of online evidence show the nonacademic benefits of research? Websites cited in UK impact case studies. *Quantitative Science Studies, 2*(3), 864-881.

Kousis, M. (1989). Tourism and the family in a rural Cretan community. *Annals of tourism research, 16*(3), 318-332.

Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.), *International encyclopedia of communication* (Vol. 1, pp. 403-407). New York, NY: Oxford University Press. Retrieved from http://repository.upenn.edu/asc_papers/226

Kvam, R. (2018). *Evaluación del impacto social: integrando los aspectos sociales en los proyectos de desarrollo*. Inter-American Development Bank.

Lalicic, L., & Önder, I. (2018). Residents' involvement in urban tourism planning: Opportunities from a smart city perspective. *Sustainability*, *10*(6), 1852.

Lambea Llop, N. (2017). A policy approach to the impact of tourist dwellings in condominiums and neighbourhoods in Barcelona. *Urban Research & Practice*, *10*(1), 120-129. https://doi.org/10.1080/17535069.2017.1250522

Lauronen, J. P. (2020). The dilemmas and uncertainties in assessing the societal impact of research. *Science and Public Policy, 47*(2), 207-218.

Lee, Y. N., & Walsh, J. P. (2022). Rethinking science as a vocation: One hundred years of bureaucratization of academic science. *Science, technology, & human values, 47*(5), 1057-1085.

Leydesdorff, L., & Opthof, T. (2010). Scopus's source normalized impact per paper (SNIP) versus a journal impact factor based on fractional counting of citations. *Journal of the American society for information science and technology, 61*(11), 2365-2369.

Li, D., Chen, H., Hui, E. C. M., Yang, H., & Li, Q. (2014). A methodology for ex-post assessment of social impacts of an affordable housing project. *Habitat International, 43*, 32-40.

Liburd, J. J. (2012). Tourism research 2.0. *Annals of Tourism Research*, *39*(2), 883-907.

Lima, G. D. M. R. and Wood, T. (2014). The social impact of research in business and public administration. *Revista de Administração de Empresas, 54*(4), 458-463.

Littell, J. H., Corcoran, J., & Pillai, V. (2008). *Systematic reviews and meta-analysis*. Oxford University Press.

Liu, C. H., & Yen, L. C. (2010). The effects of service quality, tourism impact, and tourist satisfaction on tourist choice of leisure farming types. *African Journal of Business Management, 4*(8), 1529-1545.

Liu, J. C., Sheldon, P. J., & Var, T. (1987). Resident perception of the environmental impacts of tourism. *Annals of Tourism research, 14*(1), 17-37.

Liutikas, D. (2023). Post-COVID-19 Tourism: Transformations of Travelling Experience. In *COVID-19, Tourist Destinations and Prospects for Recovery: Volume One: A Global Perspective* (pp. 277-301). Cham: Springer International Publishing.

Lyu, X., & Costas, R. (2020). How do academic topics shift across altmetric sources? A case study of the research area of Big Data. *Scientometrics*, *123*(2), 909-943.

Macfarlane, B. (2021). The neoliberal academic: Illustrating shifting academic norms in an age of hyper-performativity. *Educational Philosophy and Theory, 53*(5), 459-468.

Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in educational research, 16*(2), 193-205.

Macombe, C., & Loeillet, D. (2017). Instruments to assess the social impacts of value chains. In *Sustainable Development and Tropical Agri-chains* (pp. 257-265). Springer, Dordrecht.

Manetti, G., & Bellucci, M. (2016). The use of social media for engaging stakeholders in sustainability reporting. *Accounting, Auditing & Accountability Journal*, *29*(6), 985-1011.

Marfil, J. A. C., & Valiente, G. C. (2013). La investigación turística publicada en revistas turísticas y no turísticas: análisis bibliométrico de la producción de las universidades catalanas. *Cuadernos de Turismo*, (31), 55-81.

Marine-Roig, E., & Clavé, S. A. (2015). Tourism analytics with massive user-generated content: A case study of Barcelona. *Journal of Destination Marketing & Management, 4*(3), 162-172.

Martins, M. (2018). Tourism planning and tourismphobia: An analysis of the strategic tourism plan of Barcelona 2010–2015. *Journal of Tourism, Heritage & Services Marketing (JTHSM), 4*(1), 3-7.

Marzo Carpio, M. (2020). ¿Cuántas emisiones evitaríamos si dejásemos de viajar en avión?. *The Conversation,* 2020.

Mason, P. (2020). *Tourism impacts, planning and management*. Routledge.

Mateu-Sbert, J., Ricci-Cabello, I., Villalonga-Olives, E., & Cabeza-Irigoyen, E. (2013). The impact of tourism on municipal solid waste generation: The case of Menorca Island (Spain). *Waste management, 33*(12), 2589-2593.

McCombes, L., Vanclay, F., & Evers, Y. (2015). Putting social impact assessment to the test as a method for implementing responsible tourism practice. *Environmental Impact Assessment Review, 55*, 156-168.

McKercher, B., & Prideaux, B. (2014). Academic myths of tourism. *Annals of Tourism Research*, *46*, 16-28.

McKercher, B., & Tung, V. (2015). Publishing in tourism and hospitality journals: Is the past a prelude to the future?. *Tourism Management*, *50*, 306-315.

Meadowcroft, J. (2004). Participation and sustainable development: modes of citizen, community and organisational involvement. *Governance for sustainable development: The challenge of adapting form to function*, 162-190.

Mikki, S. (2009). Google scholar compared to web of science. A literature review. *Nordic Journal of Information Literacy in Higher Education, 1*(1).

Milano, C., Novelli, M., & Cheer, J. M. (2019a). Overtourism and tourismphobia: A journey through four decades of tourism development, planning and local concerns. *Tourism Planning & Development, 16*(4), 353-357.

Milano, C., Novelli, M., & Cheer, J. M. (2019b). Overtourism and degrowth: a social movements perspective. Journal of Sustainable Tourism, 27(12), 1857-1875.

Mills, T., Massoumi, N., & Miller, D. (2020). The ethics of researching 'terrorism'and political violence: a sociological approach. *Contemporary Social Science*, *15*(2), 119-133. Doi:10.1080/21582041.2019.1660399.

Mingers, J., & Leydesdorff, L. (2015). A review of theory and practice in scientometrics. *European journal of operational research*, *246*(1), 1-19.

Molas-Gallart, J. and Tang, P. (2011). Tracing 'productive interactions' to identify social impacts: an example from the social sciences. *Research Evaluation, 20*(3), 219-226.

Morawska-Jancelewicz, J. (2021). The role of universities in social innovation within quadruple/quintuple helix model: Practical implications from polish experience. *Journal of the Knowledge Economy*, 1-42.

Moreno-Guerrero, A. J., Gómez-García, G., López-Belmonte, J., & Rodríguez-Jiménez, C. (2020). Internet addiction in the web of science database: a review of the literature with scientific mapping. *International journal of environmental research and public health, 17*(8), 2753.

Muhonen, R., Benneworth, P., & Olmos-Peñuela, J. (2020). From productive interactions to impact pathways: Understanding the key dimensions in developing SSH research societal impact. *Research Evaluation, 29*(1), 34-47.

Mullins, C. H., Boyd, C. J., & Corey, B. L. (2020). Examining the correlation between altmetric score and citations in the general surgery literature. *Journal of Surgical Research*, *248*, 159-164.

Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC medical research methodology, 18*(1), 1-7.

National Science Foundation. (2020). *Proposal & Award Policies & Procedure Guide*. https://www.nsf.gov/pubs/policydocs/pappg20_1/index.jsp (accessed on 4 April 2021).

Neylon, C., & Wu, S. (2009). level metrics and the evolution of scientific impact. *PLoS biol, 7*(11), e1000242.

Nguyen, T. Q. T., Young, T., Johnson, P., & Wearing, S. (2019). Conceptualising networks in sustainable tourism development. *Tourism Management Perspectives*, *32*, 100575.

Niederkrotenthaler, T., Dorner, T., & Maier, M. (2011). Measure for Societal Impact of Research. *Forsch Komplementmed, 18*, 97-101.

Nigam, A., & Nigam, P. K. (2012). Citation index and impact factor. *Indian Journal of Dermatology, Venereology, and Leprology, 78*(4), 511.

Olmos-Peñuela, J., Castro-Martínez, E. and d'Este, P. (2014). Knowledge transfer activities in social sciences and humanities: Explaining the interactions of research groups with non-academic agents. *Research Policy, 43*(4), 696-706.

Olsson, A. K., Bernhard, I., Arvemo, T., & Snis, U. L. (2020). A conceptual model for university-society research collaboration facilitating societal impact for local innovation. *European Journal of Innovation Management*.

Orduña-Malea, E., & Costas, R. (2021). Link-based approach to study scientific software usage: the case of VOSviewer. *Scientometrics*, 1-34.

OTB. (2020). *Observatorio del Turismo en Barcelona: ciudad y región. Cifras clave 2019*. https://www.observatoriturisme.barcelona/es/cifras-clave-2019 (accessed on 4 March 2022).

Oviedo-García, M. Á. (2016). Tourism research quality: Reviewing and assessing interdisciplinarity. *Tourism Management*, *52*, 586-592.

Ozanne, J. L., Davis, B., & Ekpo, A. E. (2022). Research pathways for societal impact: A typology of relational engagements for consumer psychology research. *Journal of Consumer Psychology*, *32*(1), 127-144.

Ozanne, J. L., Davis, B., Murray, J. B., Grier, S., Benmecheddal, A., Downey, H., ... & Seregina, A. (2017). Assessing the societal impact of research: The relational engagement approach. *Journal of Public Policy & Marketing, 36*(1), 1-14.

Pearce, P. L. (1995). From culture shock and culture arrogance to culture exchange: Ideas towards sustainable socio-cultural tourism1. *Journal of Sustainable Tourism, 3*(3).

Pejić Bach, M., Pulido, C. M., Suša Vugec, D., Ionescu, V., Redondo-Sama, G., & Ruiz-Eugenio, L. (2020). Fostering Social

Project Impact with Twitter: Current Usage and Perspectives. *Sustainability, 12*(15), 6290.

Penfield, T., Baker, M. J., Scoble, R., & Wykes, M. C. (2014). Assessment, evaluations, and definitions of research impact: A review. *Research evaluation, 23*(1), 21-32.

Petticrew, M., & Roberts, H. (2008). Systematic reviews in the social sciences: A practical guide. *John Wiley & Sons.*

Phillips, P. A., Page, S. J., & Sebu, J. (2020). Achieving research impact in tourism: Modelling and evaluating outcomes from the UKs Research Excellence Framework. *Tourism Management, 78*, 104072.

Picornell, C. (2015). Los impactos del turismo. *Papers de turisme,* (11), 65-91.

Pinar, M., & Unlu, E. (2020). Evaluating the potential effect of the increased importance of the impact component in the Research Excellence Framework of the UK. *British Educational Research Journal*, *46*(1), 140-160.

Place, S. E. (1991). Nature tourism and rural development in Tortuguero. *Annals of Tourism Research, 18*(2), 186-201.

Pratt, S. (2015). The economic impact of tourism in SIDS. *Annals of tourism research, 52*, 148-160.

Prentice, R. (1993). Community-driven tourism planning and residents' preferences. *Tourism Management, 14*(3), 218-227.

Priem, J., & Hemminger, B. H. (2010). Scientometrics 2.0: New metrics of scholarly impact on the social Web. *First Monday*, *15*. Doi: 10.5210/fm.v15i7.2874.

Pulido, C. M., Mara, L. C., Ionescu, V. and Sordé-Martí, T. (2020). Social Impact of Psychological Research on Well-Being Shared in Social Media. *Frontiers in psychology, 11*, 135.

Pulido, C. M., Redondo-Sama, G., Sordé-Martí, T., & Flecha, R. (2018). Social impact in social media: A new method to

evaluate the social impact of research. *PloS one, 13*(8), e0203117.

Raftery, J., Hanley, S., Greenhalgh, T., Glover, M., & Blotch-Jones, A. (2016). Models and applications for measuring the impact of health research: update of a systematic review for the Health Technology Assessment programme. *Health technology assessment*, *20*(76).

Ram, S., & Shalini. (2018). Alternative Metrices for Assessing Research Impact PlumX Tool to Showcase Academic Profile of Himachal Pradesh University. In *2018 5th International Symposium on Emerging Trends and Technologies in Libraries and Information Services (ETTLIS)* (pp. 355-360). IEEE.

Ramírez, M. S., & García-Peñalvo, F. J. (2018). Co-creation and open innovation: Systematic literature review. Comunicar. *Media Education Research Journal*, 9-18.

Rau, H., Goggins, G., & Fahy, F. (2018). From invisibility to impact: Recognising the scientific and societal relevance of interdisciplinary sustainability research. *Research Policy*, *47*(1), 266-276.

Reale, E., Avramov, D., Canhial, K., Donovan, C., Flecha, R., Holm, P., ... & Van Horik, R. (2018). A review of literature on evaluating the scientific, social and political impact of social sciences and humanities research. *Research Evaluation, 27*(4), 298-308.

Redondo-Sama, G., Díez-Palomar, J., Campdepadrós, R. and Morlà-Folch, T. (2020). Communicative methodology: contributions to social impact assessment in psychological research. *Frontiers in psychology, 11*, 286.

Reed, M. S., Bryce, R., & Machen, R. (2018). Pathways to policy impact: a new approach for planning and evidencing research impact. *Evidence & Policy*, *14*(03), 431-458.

REF. (2022). *Guide to the REF results*. REF2021 Research Excellence Framework. https://ref.ac.uk/guidance-on-

results/guidance-on-ref-2021-results/ (accessed on 13 November 2022).

Richards, S., Brown, L., & Dilettuso, A. (2020). The Airbnb phenomenon: the resident's perspective. *International Journal of Tourism Cities*, *6*(1), 8-26.

Rico, A., Martínez-Blanco, J., Montlleó, M., Rodríguez, G., Tavares, N., Arias, A., & Oliver-Solà, J. (2019). Carbon footprint of tourism in Barcelona. *Tourism Management, 70,* 491-504.

Rivero, D. (2013). Metodología de la investigación.

Rodriguez, S. (1987). Impact of the ski industry on the Rio Hondo watershed. *Annals of Tourism Research, 14*(1), 88-103.

Romão, J., Domènech, A., & Nijkamp, P. (2021). Tourism in common: policy flows and participatory management in the Tourism Council of Barcelona. *Urban Research & Practice*, 1-24.

Rosenstreich, D., & Wooliscroft, B. (2009). Measuring the impact of accounting journals using Google Scholar and the g-index. *The British Accounting Review, 41*(4), 227-239.

Rother, E. T. (2007). Systematic literature review X narrative review. *Acta Paulista de Enfermagem*.

Rutty, M., Gössling, S., Scott, D., & Hall, C. M. (2015). The global effects and impacts of tourism: An overview. *The Routledge handbook of tourism and sustainability*, 36-63.

Sáez, C. A. A., & Fuentes, M. D. M. F. (2010). Difusión de la investigación española sobre turismo en revistas internacionales. *Revista de análisis turístico,* (9).

Salvia, A. L., Leal Filho, W., Brandli, L. L., & Griebeler, J. S. (2019). Assessing research trends related to Sustainable Development Goals: Local and global issues. *Journal of cleaner production*, *208*, 841-849.

Samuel, G. N., & Derrick, G. E. (2015). Societal impact evaluation: Exploring evaluator perceptions of the

characterization of impact under the REF2014. *Research Evaluation, 24*(3), 229-241.

Santos-Lacueva, R., Clavé, S. A., & Saladié, Ò. (2017). The vulnerability of coastal tourism destinations to climate change: The usefulness of policy analysis. *Sustainability, 9*(11), 2062.

Scudder, G. D., & Hill, C. A. (1998). A review and classification of empirical research in operations management. *Journal of Operations Management*, *16*(1), 91-101.

Sedighi, M. (2020). Evaluating the impact of research using the altmetrics approach (case study: The field of scientometrics). *Global Knowledge, Memory and Communication.*

Seetanah, B. (2011). Assessing the dynamic economic impact of tourism for island economies. *Annals of tourism research, 38*(1), 291-308

Seraphin, H., Sheeran, P., & Pilato, M. (2018). Over-tourism and the fall of Venice as a destination. Journal of Destination Marketing & Management, 9, 374-376.

Shah, S. H. H., Lei, S., Ali, M., Doronin, D., & Hussain, S. T. (2019). Prosumption: bibliometric analysis using HistCite and VOSviewer. *Kybernetes.*

Sheldon, P. J., & Var, T. (1984). Resident attitudes to tourism in North Wales. *Tourism management, 5*(1), 40-47

Sherren, K., Parkins, J. R., Smit, M., Holmlund, M., & Chen, Y. (2017). Digital archives, big data and image-based culturomics for social impact assessment: Opportunities and challenges. *Environmental Impact Assessment Review*, *67*, 23-30.

Shields, R., & Watermeyer, R. (2020). Competing institutional logics in universities in the United Kingdom: schism in the church of reason. *Studies in Higher Education, 45*(1), 3-17.

Shuttleworth, M. (2008). Definition of research. *Experiment Resources*.

Sigurðarson, E. S. (2020). Capacities, capabilities, and the societal impact of the humanities. *Research Evaluation, 29*(1), 71-76.

Silinevica, I. (2015, June). The role of collaboration municipality─ regional university in sustainable tourism development: Case study of Dagda county. In *ENVIRONMENT. TECHNOLOGIES. RESOURCES. Proceedings of the International Scientific and Practical Conference* (Vol. 2, pp. 261-266).

Sinatra, R., Wang, D., Deville, P., Song, C., & Barabási, A. L. (2016). Quantifying the evolution of individual scientific impact. *Science, 354*(6312).

SIOR. (2017). *Social Impact Open Repository*. Available at https://sior.ub.edu/ (accessed 1 June 2021).

Sivertsen, G. and Meijer, I. (2020). Normal versus extraordinary societal impact: how to understand, evaluate, and improve research activities in their relations to society? *Research Evaluation, 29*(1), 66-70.

Smart, W. (2009). The impact of the performance-based research fund on the research productivity of New Zealand universities. *Social Policy Journal of New Zealand, 34*(1), 136-151.

Smit, J. P., & Hessels, L. K. (2021). The production of scientific and societal value in research evaluation: a review of societal impact assessment methods. *Research Evaluation*, *30*(3), 323-335.

Smith, R. (2001). Measuring the social impact of research: difficult but necessary. *Bmj*, *323*(7312), 528.

Soosaraei, M., Khasseh, A. A., Fakhar, M., & Hezarjaribi, H. Z. (2018). A decade bibliometric analysis of global research on leishmaniasis in Web of Science database. *Annals of medicine and Surgery, 26*, 30-37.

Sordé Martí, T., Flecha, R., Rodríguez, J. A. and Bosch, J. L. C. (2020). Qualitative Inquiry: A Key Element for Assessing the

Social Impact of Research. *Qualitative Inquiry, 26*(8-9), 948-954.

Sørensen, O. H., Bjørner, J., Holtermann, A., Dyreborg, J., Sørli, J. B., Kristiansen, J., & Nielsen, S. B. (2022). Measuring societal impact of research—Developing and validating an impact instrument for occupational health and safety. *Research Evaluation*, *31*(1), 118-131.

Spaapen, J. and Van Drooge, L. (2011). Introducing 'productive interactions' in social impact assessment. *Research evaluation, 20*(3), 211-218.

Spaapen, J., & Sivertsen, G. (2020). Assessing societal impact of SSH in an engaging world: focus on productive interaction, creative pathways and enhanced visibility of SSH research. *Research Evaluation*, *29*(1), 1-3.

Spaapen, J., Van Drooge, L., Propp, T., van der Meulen, B., Shinn, T., Marcovich, A., ... & Castro-Martínez, E. (2011). Social impact assessment methods for research and funding instruments through the study of productive interactions between science and society. *Report, SIAMPI final report*.

Stemler, S. (2000). An overview of content analysis. *Practical assessment, research, and evaluation*, *7*(1), 17.

Swinnen, J. F., & de Gorter, H. (1998). Endogenous commodity policies and the social benefits from public research expenditures. *American Journal of Agricultural Economics, 80*(1), 107-115.

Tahamtan, I. and Bornmann, L. (2020). Altmetrics and societal impact measurements: Match or mismatch? A literature review. *El profesional de la información (EPI), 29*(1).

Tellado, I., Lepori, B. and Morla-Folch, T. (2020). WIEGO: Communicative Daily Life Stories to Assess Social Impact in the Lives of Informal Workers. *Qualitative Inquiry, 26*(8-9), 962-969.

Thanvisitthpon, N. (2016). Urban environmental assessment and social impact assessment of tourism development policy:

Thailand's Ayutthaya Historical Park. *Tourism Management Perspectives, 18*, 1-5.

Thomas, R. (2012). Business elites, universities and knowledge transfer in tourism. *Tourism Management*, *33*(3), 553-561.

Thomas, R. (2018a). *Questioning the assessment of research impact: Illusions, myths and marginal sectors*. Springer International Publishing.

Thomas, R. (2018b). The Impact of Academics on Policy and Practice. *Questioning the Assessment of Research Impact*, *67*-101.

Thomas, R. (2020). Problematising 'The impact of tourism research': A reply to Brauer, Dymitrow, and Tribe (2019). *Annals of Tourism Research*, 102968-102968.

Thomas, R. (2022). Affective subjectivation or moral ambivalence? Constraints on the promotion of sustainable tourism by academic researchers. *Journal of Sustainable Tourism, 30*(9), 2107-2120.

Thomas, R., & Ormerod, N. (2017). The (almost) imperceptible impact of tourism research on policy and practice. *Tourism Management*, *62*, 379-389.

Thompson, D. R., & McKenna, H. P. (2022). Research Quality—Lessons from the UK Research Excellence Framework (REF) 2021. *Nursing Reports*, *12*(3), 510-514.

Timilsina, M., Khawaja, W., Davis, B., Taylor, M., & Hayes, C. (2017). Social impact assessment of scientist from mainstream news and weblogs. *Social Network Analysis and Mining*, *7*, 1-15.

Timur, S., & Getz, D. (2008). A network perspective on managing stakeholders for sustainable urban tourism. *International Journal of Contemporary Hospitality Management*.

Toledo, E. G. (2018). Research assessment in Humanities and Social Sciences in review. *Revista Española de Documentación Científica*, *41*(3), 1-14.

Tonetti, M. S. (2019). Leadership in publishing. *Journal of dentistry, 87*, 28-31.

Tosun, C. (2002). Host perceptions of impacts: a comparative tourism study. *Annals of Tourism Research, 29*, 231-253.

Travieso-Rodríguez, C., & Araújo, R. F. D. (2018). Altmetrics and citation indicators applied to scientific production in ScienceOpen: descriptive analysis for Brazil, Spain and Portugal. *Bibliotecas. Anales de Investigación, 14*(2), 124–137.

Tribe, J. (1997). The indiscipline of tourism. *Annals of tourism research*, *24*(3), 638-657.

Tribe, J. (2004). Knowing about tourism. Qualitative research in tourism. *Ontologies, epistemologies and methodologies*, 46-62.

Tricarico, L., Galimberti, A., Campanaro, A., Magoni, C., & Labra, M. (2020). Experimenting with RRI tools to drive sustainable agri-food research: the SASS case study from sub-saharan Africa. *Sustainability*, *12*(3), 827.

Tsundoda, T., & Mendlinger, S. (2009). Economic and social impact of tourism on a small town: Peterborough New Hampshire. *Journal of Service Science and Management, 2*(02), 61.

Um, S., & Crompton, J. L. (1987). Measuring resident's attachment levels in a host community. *Journal of Travel Research, 26*(1), 27-29.

Van den Akker, W., Spaapen, J. and Maes, K. (2017). Productive interactions: Societal impact of academic research in the knowledge society. *League of European Research Universities (LERU). https://www.leru.org/publicafions/producfive-interacfions-societal-impact-of-academic-research-in-the-knowledge-society.*

Van den Besselaar, P. A. A., Flecha, R., & Radauer, A. (2018). *Monitoring the impact of EU Framework Programmes*.

Van der Meulen, B., & Rip, A. (2000). Evaluation of societal quality of public sector research in the Netherlands. *Research Evaluation, 9*(1), 11–25.

Van der Weijden, I., Verbree, M. and Van Den Besselaar, P. (2012). From bench to bedside: the societal orientation of research leaders: the case of biomedical and health research in the Netherlands. *Science and Public Policy, 39*(3), 285-303.

Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics, 84*(2), 523-538.

Vanclay, F. (2002). Conceptualising social impacts. *Environmental Impact Assessment Review, 22*(3), 183-211.

Vanclay, F. (2003). International principles for social impact assessment. *Impact assessment and project appraisal, 21*(1), 5-12.

Vanclay, F., Esteves, A.M., Aucamp, I. and Franks, D. (2015). *Evaluación de Impacto Social: Lineamientos para la evaluación y gestión de impactos sociales en proyectos* (BID, trad.) Fargo, Dakota del Norte: Asociación Internacional para la Evaluación de Impactos.

Vayá, E., Garcia, J. R., Murillo, J., Romaní, J., & Suriñach, J. (2018). Economic impact of cruise activity: the case of Barcelona. *Journal of Travel & Tourism Marketing, 35*(4), 479-492.

Viana-Lora, A. (2023). The societal impact of tourism research of the Research Excellence Framework 2021. *Journal of Policy Research in Tourism, Leisure and Events*, 1-16.

Viana-Lora, A. and Nel·lo-Andreu, M. G. (2020). Alternative Metrics for Assessing the Social Impact of Tourism Research. *Sustainability, 12*(10), 4299.

Viana-Lora, A. and Nel·lo-Andreu, M. G. (2021). Approaching the social impact of research through a literature review. *International Journal of Qualitative Methods, 20*.

Viana-Lora, A., & Nel-lo-Andreu, M. (2023). Pathways for the social impact of research in Barcelona's tourism policy. *International Journal of Tourism Cities*, *9*(2), 481-495.

Viana-Lora, A., Nel-lo-Andreu, M. G., & Anton-Clavé, S. (2022). Advancing a framework for social impact assessment of tourism research. *Tourism and Hospitality Research*, 14673584221105007.

Wang, Y., & Pfister, R. E. (2008). Residents' attitudes toward tourism and perceived personal benefits in a rural community. *Journal of Travel Research, 47*(1), 84-93.

Willebrands, M., & Russo, P. (2020). How Astronomers Perceive the Societal Impact of Research: An Exploratory Study. *arXiv preprint arXiv:2003.05759*.

Williams, J., & Lawson, R. (2001). Community issues and resident opinions of tourism. *Annals of tourism research, 28*(2), 269-290.

Wilsdon, J., Allen, L., Belfiore, E., Campbell, P., Curry, S., Hill, S., et al. (2015). The metric tide: Report of the independent review of the role of metrics in research assessment and management. DOI: 10.13140/RG.2.1.4929.1363.

Wilsdon, J., Allen, L., Belfiore, E., Campbell, P., Curry, S., Hill, S., ... & Wilsdon, J. (2015). The metric tide. *Report of the independent review of the role of metrics in research assessment and management*. Bristol, UK: Higher Education Funding Council for England (HEFCE).

Wilson, J., Garay-Tamajon, L., & Morales-Perez, S. (2022). Politicising platform-mediated tourism rentals in the digital sphere: Airbnb in Madrid and Barcelona. *Journal of Sustainable Tourism*, *30*(5), 1080-1101. https://doi.org/10.1080/09669582.2020.1866585

Wolf, C. P. (1982). Social impact assessment. *Impact Assessment, 1*(1), 9-19.

Wood, S., & Pardey, P. G. (1994). Supporting agricultural research policy and priority decisions: an economic-ecologic systems approach. In *Opportunities, use, and transfer of systems research methods in agriculture to developing countries* (pp. 45-66). Springer, Dordrecht.

Woolcott, G., Keast, R., & Pickernell, D. (2020). Deep impact: Re-conceptualising university research impact using human cultural accumulation theory. *Studies in higher education, 45*(6), 1197-1216.

Woosnam, K. M., Norman, W. C., & Ying, T. (2009). Exploring the theoretical framework of emotional solidarity between residents and tourists. *Journal of Travel Research, 48*(2), 245-258.

World Tourism Organization (UNWTO). (2015). *Tourism and the Sustainable Development Goals*. Available online: https://www.e-unwto.org/doi/pdf/10.18111/9789284417254 (accessed on 6 March 2019).

World Tourism Organization (UNWTO). (2019). *Exports from international tourism hit usd 1.7 trillion*. Available online: https://www.unwto.org/global/press-release/2019-06-06/exports-international-tourism-hit-usd-17-trillion (accessed on 28 July 2023).

World Tourism Organization. Organización Mundial del Turismo (2019), *Panorama del turismo internacional*, edición 2019, OMT, Madrid, DOI: https://doi.org/10.18111/9789284421237

Wray, M. (2013). Adopting and implementing a transactive approach to sustainable tourism planning: Translating theory into practice. In *Tourism Governance* (pp. 205-228). Routledge.

Xiao, H., & Smith, S. L. (2006). The making of tourism research: Insights from a social sciences journal. *Annals of Tourism Research, 33*(2), 490-507.

Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research, 39*(1), 93-112.

Ye, C., & Liu, Z. (2020). Rural-urban co-governance: Multi-scale practice. *Science Bulletin*, *65*(10), 778-780.

Yen, I. Y., & Kerstetter, D. (2008). Residents' view of expected tourism impact, attitude, and behavioral intention. *Tourism Analysis, 13*(5-6), 545-564.

Zhang, S. J., Lyu, P. H., & Yan, Y. (2015). Global geographical and scientometric analysis of tourism-themed research. *Scientometrics*, *105*(1), 385-401.

Zhao, W. & Ritchie, J. R. B. (2007). An investigation of academic leadership in Tourism Research: 1985-2004. *Tourism Management, 28*(2), 476-490.

Zheng, H., Pee, L. G., & Zhang, D. (2021). Societal impact of research: a text mining study of impact types. *Scientometrics*, *126*, 7397-7417.

UNIVERSITAT
ROVIRA i VIRGILI