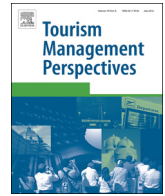




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## Sustainability communication in tourism – A literature review

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## ABSTRACT

Sustainability communication in tourism is an emerging research topic. In acknowledgement of tourism researchers' and practitioners' need to gain a better theoretical and practical understanding of effective sustainability communication, this article provides the first literature review to identify what is known of the subject and what needs further study. This systematic review indicates that extant research has focused on the marketing of green hotels and environmental sustainability. Little is understood about personal communication channels and message factors that lead to positive consumer reactions. These are major explanations why sustainability messages have not been as effective as they could be. Furthermore, there is a lack of theoretical foundation with regard to information processing and effective message design, and of experiments and interpretivist/qualitative approaches to support such research. Recommendations on future research are provided to broaden theoretical perspectives and support practitioner solutions by a more holistic approach to sustainability communication.

### 1. Introduction

The tourism industry has begun to increase its sustainability engagement, mainly by developing a more sustainable product range. Such tourism products are endowed with different sustainability attributes to ensure high standards of economic fairness (e.g., local purchasing), positive sociocultural impacts (e.g., protecting cultural heritage) and environmental-friendliness (e.g., responsible resource management) (GSTC, 2016; Wehrli et al., 2014). These alternative products are managed according to the principles of sustainable tourism by positively aligning sustainability criteria with the needs of visitors, the industry, and host communities (UNWTO, 2013; Wehrli et al., 2014). Sustainability communication sets out to make consumers aware of the availability of sustainable travel products, to inform consumers how these offerings meet their needs and comply with sustainability criteria, and ultimately to stimulate pro-sustainable purchases. Alongside this product perspective, sustainability communication aims to increase transparency about a company's sustainability engagement to encourage an interactive dialogue between companies and stakeholders about the company's activities (Belz & Peattie, 2012; Bridges & Wilhelm, 2008). Hence, sustainability communication forms part of a wider sustainability marketing strategy that adopts an integrative and holistic approach to achieve corporate objectives and the long-term goals of a sustainable development (Belz & Peattie, 2012).

Communicating sustainability, however, is a challenge. The abstract and vague nature of the concept of sustainability and sustainable tourism (Bramwell, Henry, Jackson, & van der Straaten, 1996; Moser,

2010) make it difficult for consumers to recognise and understand sustainability product attributes (and their added value) (McDonald & Oates, 2006). These complexities add to the largely intangible service characteristics of travel products (Zeithaml, Parasuraman, & Berry, 1985) and increase the level of uncertainty and risk (Wahab, Crampon, & Rothfield, 1976) associated with pro-sustainable travel choices as opposed to conventional tourism bookings. These intricacies are reflected in the current status of research and practice on sustainable communication. How to design effective sustainability messages that motivate sustainable consumer behaviour is an issue marketing practitioners still have a limited understanding of (Belz & Peattie, 2012; Villarino & Font, 2015; Wehrli et al., 2014) and tourism researchers cannot fully explain theoretically (Wehrli et al., 2014). Despite the importance of effective sustainability communication for the tourism industry, its theoretical foundations, influences, and outcomes have still to be examined (Coles, Fenclova, & Dinan, 2013; Wehrli et al., 2014). To address this gap in the literature, this article provides the first literature review of research into sustainability communication in tourism.

This study uses a systematic literature review with the aim of identifying, summarising, and critically assessing the existing literature on sustainability communication in tourism to give an overview of what is known and what is still unknown about this subject. In an attempt to provide researchers and practitioners with a deeper understanding of the mechanisms of effective sustainability communication, we will examine how sustainability communication has been investigated with regards to the formal criteria of the publications, research contexts,

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communication channels, message factors, outcomes, methodologies, and theoretical foundations. The aim is to derive where relevant research has been undertaken and where potential knowledge gaps are that would guide future research. Both academia and practitioners can benefit from the findings presented in this paper. Tourism research can benefit from this article's approach, since this review responds to the researchers' call for a more 'concrete scientific understanding' (Wehrli et al., 2014, p. 2) while the methodological rigour of the systematic review conducted here is a response to the need for high-quality literature reviews (Petticrew & Roberts, 2006). Practitioners can draw on this synthesis of knowledge to derive the latest developments and insights to find solutions on how to technically compose sustainability messages.

## 2. Methodology

This article draws on a systematic literature review to respond to the early stages of the industry's and research community's understanding of the mechanisms of effective sustainability communication and the uncertainty of the answers to this question. Furthermore, a systematic review is used to account for the complex, multidisciplinary, and fragmented conditions that define sustainable tourism (Farrell & Twinning-Ward, 2004; Pomeroy, Noble, & Johnson, 2011), and consequently the knowledge base concerning the marketing communication of its products. A systematic literature review is characterised by comprehensiveness in the search for relevant publications on a certain theme and involves a synthesis and critical appraisal of the literature guided by a series of pre-defined steps (Petticrew & Roberts, 2006). This study uses a systematic review approach as this method best fits the aims of the study and the basic conditions that frame research on sustainability communication in tourism.

Systematic quantitative reviews have been employed in tourism studies to investigate themes such as gender and risk (Yang, Khoo-Lattimore, & Arcodia, 2017), virtual reality and augmented reality (Yung & Khoo-Lattimore, 2017), the use of mixed methods (Khoo-Lattimore, Mura, & Yung, 2017), and sustainable tourism (Kristjánsson, Ólafsson, & Ragnarsdóttir, 2017). The method is useful to show what is and what is not yet known about a subject. Its quantitative approach is particularly effective in mapping out the breadth of a field (Petticrew & Roberts, 2006; Pickering & Byrne, 2014). By quantifying where research has been conducted and where there are knowledge gaps, the method is suitable for capturing emergent research themes and areas with uncertain evidence. Thus, the method is particularly useful when examining the effectiveness of interventions (Petticrew & Roberts, 2006; Pickering & Byrne, 2014), as in the case of tourism sustainability communications. Most importantly, this method is advantageous for coping with the given diverse and transdisciplinary knowledge base (Petticrew, 2001; Pickering & Byrne, 2014). In this respect, a systematic review supports the promotion of new methodologies (Petticrew & Roberts, 2006), which is so important when accounting for the specific intricacies involved in sustainability communication and its research.

Systematic reviews can address some of the weaknesses which are commonly associated with the methodologies of traditional reviews. Being reliant on an author's expertise, traditional reviews tend to produce unrepresentative forms of sampling and generate subjective and biased results, which are less structured and often uncritical (Petticrew & Roberts, 2006). In contrast, quantitative systematic reviews make use of a transparent and replicable procedure in the search, collection and selection of articles. This enhances the methodology's academic rigour (Petticrew & Roberts, 2006) and yields comparable results when the procedure is repeated (Pickering & Byrne, 2014). There is a need in the tourism industry to design more effective sustainability appeals. By assessing studies for their practice relevance, identifying emergent developments, and providing evidence-based answers (Petticrew & Roberts, 2006), a systematic review could provide practitioners with



Fig. 1. The systematic review process.  
(Source: Adapted from Petticrew & Roberts, 2006).

practical solutions to their problems.

The systematic review process was conducted in a sequence of different steps which are adapted from Petticrew and Roberts' (2006) seven-stages-model of a systematic review (Fig. 1).

To investigate the mechanisms of effective sustainability communications in tourism, we frame this literature review with the following research questions and sub-questions similar to the dimensions of marketing communications as defined by Kotler, Bowen, and Makens (2010). The main research questions addressed in this literature review are:

- What is the **current state of knowledge** of sustainability communication in tourism?
- Which are **future directions** of research?

More specifically, this literature review analyses the following sub-questions, which refer to formal criteria and content-related criteria discussed in the literature:

- How did the literature develop in terms of its **year-wise development** and its **distribution** over journals? What is the **disciplinary background** of the journal publications?
- In which **contexts** has sustainability communication been investigated (i.e., which types of tourism products and sustainability dimensions)?
- Which **dimensions of sustainability** have been addressed?
- Which **channels of communications** and **message factors** have been examined?
- What **outcomes** of sustainability communication have been identified?
- Which **theories** have been used to explain the effects of sustainability communication?
- What types of **methods** have been used to analyse sustainability communication?

After defining the research questions (1), the type of studies and their selection criteria for this review were determined (2). To this end, a review protocol was used to document the rationale for the review, the search procedure including the search terms and databases, and the inclusion and exclusion criteria for the literature to be selected. This form of documentation allows for the replicability of the results. It also documents how the inclusion and exclusion criteria were defined, which is important for assessing the relevance and quality of the literature reviewed (Petticrew & Roberts, 2006). The scope of this literature review includes original research articles published in peer-reviewed journals written in the English language. Since the aim of the

review is to provide a comprehensive overview of the body of knowledge, the time frame was set to include all articles published until the end of the year 2017. Also, in order to ensure the quality associated with peer-reviewed literature and access to the most recent discussions in the research community, this review excludes editorials, working papers, conference articles, books, and chapters. From a topical perspective, it was decided to also eliminate studies dealing with corporate social responsibility due to the major difference in the definitions used by sustainability communication and CSR. While sustainability communication is conceived to be a product-related concept that addresses customers, corporate social responsibility refers to the corporate level and to stakeholder engagements which do not necessarily entail sustainability on a product dimension (Belz & Peattie, 2012). However, the review does consider social marketing literature that addresses the use of commercial marketing measures to achieve behavioural change (among tourists) (Dann, 2010), and therefore, forms one pillar of sustainability communication.

To collect the relevant literature on sustainability communication in tourism (3), the following search terms in title, keywords or abstracts were used: “sustainability communication”, as well as “sustainability” and “communication”, and “tourism”. In an attempt to achieve comprehensiveness and interdisciplinarity, the relevant literature was sought in the most significant electronic databases for tourism as suggested by Yang et al. (2017): Ebsco Host (Hospitality and Tourism Complete), Science Direct (Elsevier), Emerald, Scopus, Sage, Web of Science, and Proquest. Some of the databases offered additional filters that were used for the selection process (ScienceDirect, Emerald, Sage, Web of Science). After completing the literature search, the articles were screened for inclusion and exclusion criteria (4).

Fig. 2 depicts the different steps of the systematic literature search which are adapted from Moher et al.'s (2009) guidelines. The search resulted in 1597 articles which were subsequently checked against the inclusion and exclusion criteria. While publications were removed which did not fit the formal criteria (language, type of publication, duplicates, etc.), all articles were considered that contained the search terms in the title, abstract or keywords. To ensure that the articles really dealt with the research subject, their content was screened in a third step of the selection process. As a result, 163 full-text documents remained and were assessed for eligibility. Another 74 articles were discarded, mainly because they did not deal with the topic but instead focused on implementation issues, CSR or contexts other than tourism. Additionally, these articles were read to check the selected body of literature for cross references, resulting in another five articles which were of interest to this research. The small number of additional sources can be taken as evidence of the validity of the research (Seuring & Müller, 2008). The material collection process resulted in a total of 94 documents, which were identified for the literature review and were read in full to assess their content.

In the next step the articles were coded for their year of publication, journal type, research context including tourism product type and sustainability dimension, communication channels, message factors, outcomes, theories, and methods. Each article was coded for the different categories. The tourism product types were derived from the articles, while the coding of the four sustainability dimensions (environmental, economic, social, and cultural) followed Mowforth and Munt's (2003) categorisation. Communication channels were categorised into personal and impersonal communication channels and message factors into message content, structure, format, and source (Kotler et al., 2010). The categories which describe the outcomes of sustainability communication were derived from the content of the articles and classified in accordance to the quality of the outcomes. The theories used for research on sustainability communication in tourism are drawn from the articles while the methodologies were classified according to Creswell's (2013) distinction of empirical studies as qualitative, quantitative, or mixed-method research. Accordingly, non-empirical articles were categorised as theoretical, conceptual papers or

literature reviews. The information was organised in a summary table and findings were assessed and aggregated into higher level categories and patterns to enable a synthesis and critical appraisal of the content.

### 3. Results

The following sections present the results of this systematic review regarding the criteria mentioned in the research questions.

#### 3.1. Year-wise distribution of articles

The data selection resulted in 94 research articles for analysis in this review.

The number of research articles on sustainability communication in tourism has increased considerably since the first publication on the subject in 1996. Research has mainly developed during the last five years with peaks in the years 2013, 2014, 2016, and 2017, indicating the growing importance of sustainability communication as a theme in tourism and hospitality research. The peak in 2017 can be explained by the *Journal of Sustainable Tourism's* (JOST) special issue dedicated to the marketing of sustainable tourism, which also indicates that the topic is of rising academic interest (Fig. 3).

#### 3.2. Journal representation and disciplinary focus

The search for “sustainability” and “communication” resulted in 94 publications which appeared in 39 different journals with various disciplinary backgrounds (Table 1).

The most important journals among which the research articles were distributed related to tourism and hospitality. The majority of the articles (26) were published in the *Journal of Sustainable Tourism*, followed by high numbers of publications in the *Cornell Hospitality Quarterly* (6), *Tourism Management* (5), the *International Journal of Hospitality Management* (4), and the *Journal of Contemporary Hospitality Management* (4). There were a further four publications in the *Journal of Vacation Marketing*. The research articles were distributed over journals from different disciplinary backgrounds, indicating the interdisciplinary character of the research: tourism or hospitality research, management, marketing and consumer studies, environmental studies, and communication science.

The top five journal representations reflect the great need for both a theoretical and a practical understanding of sustainability communication. While the *Journal of Sustainable Tourism* and *Tourism Management*, due to their prestige and impact, are the leading journals in presenting articles on theory advancement in tourism research, the other three journals, and the *Journal of Vacation Marketing* in particular, focus on practice-related research.

#### 3.3. Research contexts

This section provides an overview of the different contexts that have been used to research sustainability product communication (Table 2).

##### 3.3.1. Type of tourism product

The review indicates that the overwhelming majority of studies investigated green hotel contexts (28.7%). Two of the other main categories look at destinations (21.3%) and protected areas such as national parks (11.7%). Sustainable tourism as a holistic concept was the major focus of conceptual papers.

While the review reveals that all major stakeholders in the tourism value chain are represented in extant research, they do not receive equal consideration. Comparatively little research has been completed on the role of mass market and specialist tour operators and their partners in supplying and promoting their services (e.g., airlines, travel agencies, visitor attractions). This is despite the fact that these tourism companies are the most important players in the tourism value chain

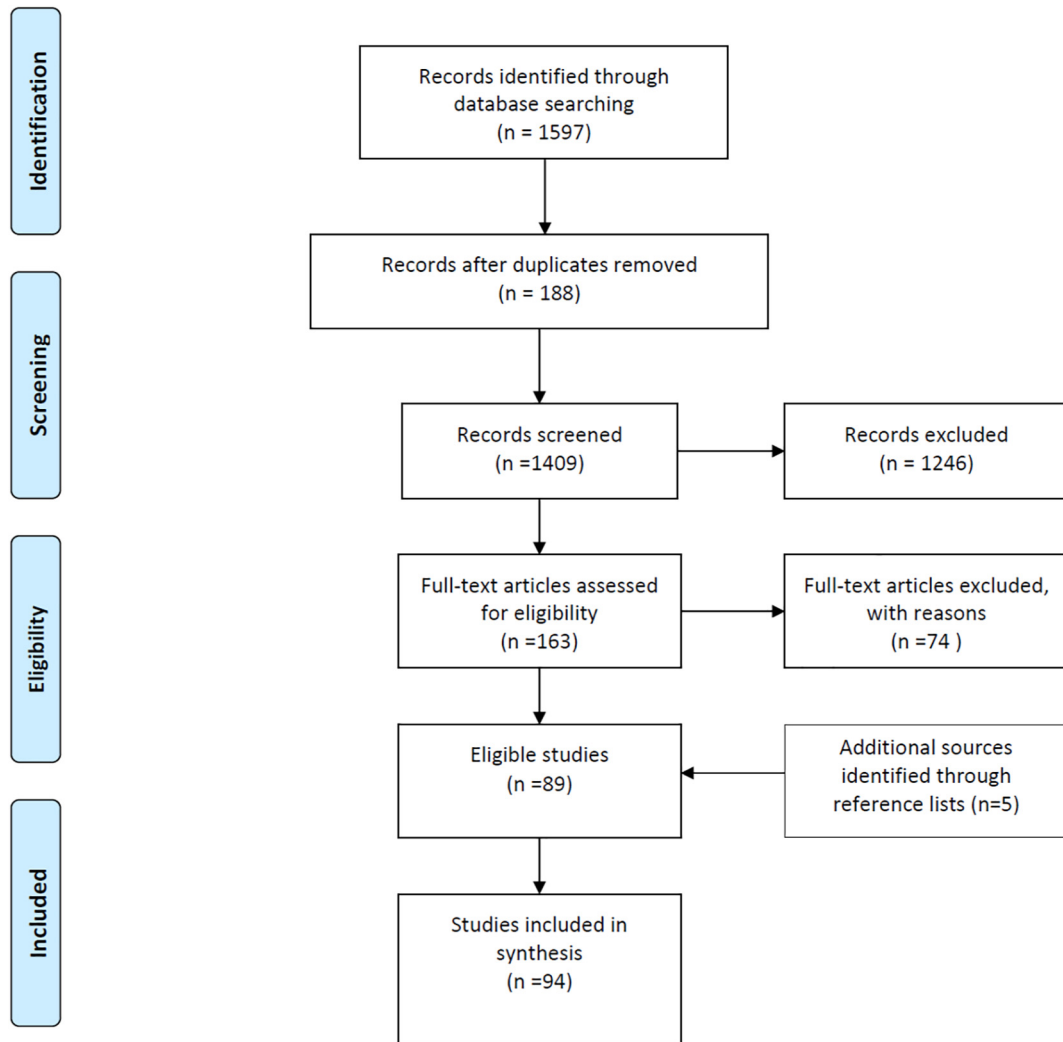


Fig. 2. Overview of systematic research process. (Source: Yang et al., 2017).

(Sigala, 2008). In recognition of the importance of such contexts, the sustainability marketing of tourism companies has only recently found attention in the tourism literature, with rising numbers of studies on this subject in the year 2017 and in the special issue of JOST.

Furthermore, there is potential for the study of online products, green events, and the role of cruises in marketing sustainability.

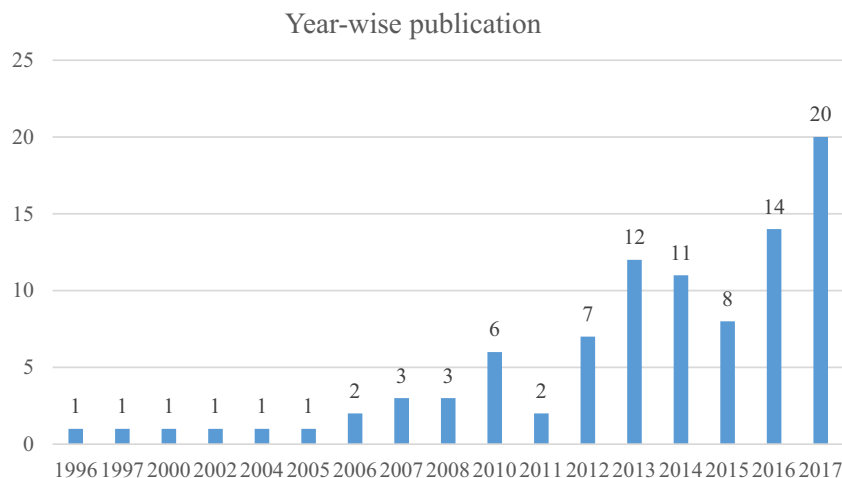


Fig. 3. Year-wise distribution of publications (n = 94).

**Table 1**  
Distribution by journal and discipline (n = 94).

Journal name	No. of articles	Frequency of field (%)
Tourism	(61)	(64.9)
Journal of Sustainable Tourism	26	
Tourism Management	5	
Journal of Vacation Marketing	4	
Journal of Travel Research	3	
Annals of Tourism Research	2	
Tourism & Hospitality Research	2	
Tourism Recreation Research	2	
Worldwide Hospitality & Tourism Themes	3	
Journal of Hospitality & Leisure Marketing	2	
Journal of Hospitality & Tourism Technology	2	
Current Issues in Tourism	1	
Journal of Ecotourism	1	
Tourism Review	1	
Journal of Tourism Futures	1	
Journal of Travel & Tourism Marketing	1	
International Journal of Culture, Tourism & Hospitality Research	1	
International Journal of Event & Festival Management	1	
Journal of Cultural Heritage Management & Sustainable Development	1	
European Journal of Tourism Research	1	
Journal of Convention & Event Tourism	1	
Hospitality	(14)	(14.9)
Cornell Hospitality Quarterly	6	
International Journal of Hospitality Management	4	
International Journal of Contemporary Hospitality Management	4	
Management	(7)	(7.4)
Journal of Cleaner Production	2	
European Management Journal	1	
Strategic Change	1	
Quality Access	1	
Journal of Place Management & Development	1	
Journal of Quality Assurance in Hospitality & Tourism	1	
Marketing and consumer studies	(5)	(5.3)
International Journal of Consumer Studies	3	
Journal of Consumer Marketing	1	
Journal of Consumer Culture	1	
Environmental studies and sustainability studies	(5)	(5.3)
Journal of Security & Sustainability Issues	1	
Environment & Behavior	1	
Island Studies Journal	1	
Sustainability	1	
Environmental Management	1	
Communication, media, and information sciences	(2)	(2.1)
New Media & Society	1	
Kybernetes	1	
Total:	94	100

### 3.3.2. Dimensions of sustainability

With reference to the product type, it is also important to indicate the extent to which their sustainability attributes were investigated in the research articles (Table 3).

The majority of the articles considered the “environmental” dimension of sustainability (57.4%), while only 35.1% investigated sustainability communication from a triple-bottom-line approach, integrating economic, ecological, and social sustainability aspects in their analysis. However, these were recent studies which were published during the last few years, especially in the JOST special issue in 2017. The strong focus on environmental sustainability can be explained by

the predominance of research on green hotel products and by the historical evolution of sustainable tourism against the background of ecotourism (Bramwell et al., 1996). There are six studies which focus on the social aspect of sustainability (6.4%) while only one focuses on cultural sustainability.

It is a major weakness that extant research does not yet address the marketing of sustainable tourism products in terms of all sustainability attributes. However, recent studies, and especially those of the JOST special issue in 2017, have recognised the need for research to take more a holistic approach, although such studies are still limited in number.

### 3.4. Communication channels

Table 4 depicts the types of communication channels that were empirically researched.

The most researched channels of sustainability communication are non-personal communication channels, i.e., ‘media that carry messages without personal contact or feedback’ (Kotler et al., 2010, p. 368). Organisations’ websites (19.4%), hotel information (16.4%), and certifications (10.4%) are the major focus in the current literature. Other communication channels mainly refer to the image effects of destinations or events (8.9%), different forms of print information (6.0%) (e.g., about national parks) travel magazines or press coverage (4.5%), online advertising (4.5%), sustainability reporting (3.0%), destination brochures (3.0%), or restaurant information (1.5%).

‘In personal communication channels, two or more people communicate directly with each other’ (Kotler et al., 2010, p. 368). Such personal forms of sustainability communication are under-researched in the extant literature, accounting for 21% of all studies. Research on social media has only recently evolved (since 2017) and is the most investigated personal communication channel (7.5%), followed by the role of sales agents or tour guides in conveying sustainability messages (4.5%), an analysis of ministers’ statements (1.9%), and one study on residents’ perceptions (1.5%). While more research on personal forms of communication is needed, investigation of a wider spectrum of communication channels would also be beneficial.

### 3.5. Message factors

Table 5 relates to the study of message factors involving message content, source, and structure (Kotler, Bowen, & Makens, 2010).

Research into message factors is in its infancy, with few studies dealing with effective message design. Message content is the most investigated message factor (72.2%). Tourists prefer emotional to rational appeals in destination brochure and hotel website sustainability information (Villarino & Font, 2015; Wehrli et al., 2014; Zanon & Teichmann, 2016), personal benefits to social benefits (Hardeman, Font, & Nawijn, 2017), or personal benefits from carbon-offsetting (Babakhani, Ritchie, & Dolnicar, 2017). Other studies deal with the role of temporal, social, or spatial distance (Hanks, Zhang, Line, & McGinley, 2016), gain or loss, promotion or prevention (Blöse, Mack, & Pitts, 2015), and positive or negative message content (Sirakaya-Turk, Baloglu, & Mercado, 2014). The study of source factors (22.2%) has looked at the influence of the source’s credibility and expertise (Sirakaya-Turk et al., 2014; Sparks, Perkins, & Buckley, 2013; Zanon & Teichmann, 2016), destination types, process fluency, and consumer scepticism (Hanks et al., 2016) while only one study considers message structures (Villarino & Font, 2015).

There is considerable potential for research into the persuasiveness of message factors, especially with regard to a broader spectrum of tourism products and marketing materials.

### 3.6. Outcomes

This section shows the outcomes of sustainability communication

that were empirically investigated in the reviewed literature.

Analysis reveals that findings on the quality of the impact of sustainability communication on consumers are inconsistent. Most studies find that sustainability communication has a positive effect on traveler behaviours en route (22%) (e.g., Kim, Airey, & Szivas, 2011) and on the pre-purchase stage, for example in terms of pro-sustainable travel choices (14.6%) (e.g., Hardeman et al., 2017) or intention to purchase (9.8%) (e.g., Zanon & Teichmann, 2016). Changes in behavioural patterns do not only apply to tourists, but also to businesses and stakeholders (8.5% and 4.9%) who were motivated towards more sustainable engagement (e.g., Hsieh, 2012).

Furthermore, the literature review uncovers a series of positive commercial outcomes related to an intention to revisit (3.7%), positive word of mouth (2.4%), consumer intention to pay a premium, and image effects (1.2%) (e.g., Lee, Hsu, Han, & Kim, 2010). However, the outcomes of sustainability communication are not exclusively positive. For example, consumers are unaware of ecolabels (1.2%) (e.g., Park & Millar, 2016), and even when aware of the negative impacts of tourism, may demonstrate the attitude-behaviour gap (3.7%) (e.g., Cohen, Higham, & Reis, 2013; Hibbert, Dickinson, Gössling, & Curtin, 2013). Other visitors were doubtful about the positive outcomes of sustainability destination marketing (2.4%) (e.g., Chen, Huang, & Cai, 2014). Further research should clarify the inconsistent findings on the commercial outcomes of sustainability communication and should more deeply investigate its role in the attitude-behaviour gap.

### 3.7. Theory

The table below presents an overview of the theories applied in the reviewed studies, classified by discipline.

The overwhelming majority of studies do not apply a theory (76.6%), while only 23.4% of studies made use of a theoretical framework that was grounded in empirical data, some of them using more than one theory in one study (e.g., Line, Hanks, & Zhang, 2016).

The literature review reveals that the theoretical background of current research is interdisciplinary. While most studies stem from communication studies (81.7%) with a focus on social-psychological theories, it is important to mention that these theories only emerged in tourism research during the last five years. Among those investigations which employ theory, the most prevalent is the theory of planned behaviour (TPB) (18.2%) and the elaboration likelihood model (ELM) (18.2%). TPB was applied to show the positive effects of a green hotel image on booking, and post-purchasing behaviour (e.g., Lee et al., 2010). The ELM was used to examine the persuasiveness of messages leading to enduring attitude change, which then motivated national park visitors to engage in pro-sustainable behaviours such as paying park-user fees (Steckenreuter & Wolf, 2013) or not littering (Brown, Ham, & Hughes, 2010). Some studies combine the use of TPB with other theories like ELM (Steckenreuter & Wolf, 2013) or persuasion theory (Sparks et al., 2013).

Information processing theory is used to explain the effectiveness of sustainability messages, type of destination, and processing fluency among customers (Hanks et al., 2011). Combined with construal level theory, one study explains that a green restaurants' message is effectively presented as something temporally and spatially concrete and achievable (Line et al., 2016). Construal level theory, message framing theory, and regulatory focus theory show that guestroom message cards in hotels can have a positive effect when their message design fits other message aspects (Lee & Oh, 2014). Realist theory gives insights into the relation between context, intervention, and outcome when investigating employee behavioural change on a cultural heritage site (Gregory-Smith, Wells, Manika, & McElroy, 2017). Cognitive dissonance theory provides a powerful explanation of the barriers behind the attitude-behaviour gap in sustainable tourism (Juvan & Dolnicar, 2014). One study uses learning theory to depict how experiential learning on an ecotourism experience can contribute to behavioural

**Table 2**  
Research contexts (n = 94).

Context	No. of articles	Percentage (%)
Hotels/lodging	27	28.7
Destination	20	21.3
National parks/protected areas	11	11.7
Sustainable tourism (whole-system approach)	11	11.7
Tourism businesses/tour operators	7	7.5
Visitor attractions	5	5.3
Air travel	3	3.2
Online tourism products	3	3.2
Events/conventions	3	3.2
Travel agencies	2	2.1
Restaurants	1	1.1
Cruises	1	1.1
Total	94	100

change (Minnaert, 2012).

Sociological explanations dominate attitude-behaviour gap research. Hibbert et al. (2013) and Cohen et al. (2013) found that self-identity is an adequate explanation for the inconsistencies between everyday behaviour at home and travel behaviour. Social exchange theory, however, could explain the extent as to which residents engage in volunteer tourism activities (Dillette, Douglas, Martin, & O'Neill, 2017). Legitimacy theory adds a socio-political perspective to sustainability communication by analysing cruise companies' media strategy in the event of a legitimacy crisis (Aureli, Medei, Supino, & Travaglini, 2016).

Future research should focus more on the formal testing of theory. The value of theory-based research lies in producing answers about the effectiveness of interventions (Hall, 2016; Michie, Johnston, Francis, Hardeman, & Eccles, 2008). An interdisciplinary theoretical perspective on sustainability communication will contribute to an enhanced scientific and practical understanding of consumer information processing, the causal determinants of behaviour, and the design of sustainability messages to target such influencing factors (Tables 6 and 7).

### 3.8. Research methodologies

Table 8 presents the methodologies used in the studies analysed.

The majority of the investigations (83%) are empirical studies, while 17% of all studies represent non-empirical research. Most of the empirical literature involves a quantitative research design (46.8%), 20.2% of all studies apply qualitative research methods while 16% employ a mixed-methods approach. Among the non-empirical research, conceptual papers prevail (13.8%) over theory discussions (2.1%), and over one literature review on climate change in tourism (1.1%).

There is a predominance of survey-based studies, which tend to measure hypothetical purchase or travel situations instead of real behaviour (e.g., Han & Kim, 2010). The use of experimental designs has increased mainly during the last two years (e.g., Araña & León, 2016), indicating that they are still new in tourism research and more experience may be needed. There is a rich use of content analysis in practice-related research, which investigates sustainability information on websites or in magazines (e.g., Villarino & Font, 2015), and there is little empirical evidence with regard to conjoint analysis (e.g., Millar &

**Table 3**  
Dimensions of sustainability (n = 94).

Sustainability dimensions	No. of articles	Percentage (%)
Environmental	54	57.4
Sustainability	33	35.1
Social	6	6.4
Cultural	1	1.1
Total	94	100

**Table 4**  
Communication channels (n = 67).

Communication channel	No. of articles	Percentage (%)
Non-personal communication channels	53	79.1
Websites of organisations	13	19.4
Hotel information/hotel rooms	11	16.4
Label/certification	7	10.4
Image	6	8.9
National park information	4	6.0
Travel magazine/press coverage	3	4.5
Online advertising	3	4.5
Reporting	2	3.0
Brochure	2	3.0
Restaurant information	1	1.5
Mobile app	1	1.5
Personal communication channels	14	21
Social media	5	7.5
Sales agents/staff behaviour	3	4.5
Tourguides/guides	3	4.5
Ministers' statements	1	1.5
Residents' perceptions	1	1.5
Various	1	1.5
Total <sup>a</sup>	67	100

<sup>a</sup> Not all of the studies examine a communication channel.

**Table 5**  
Message factors (n = 18).

Message factors	No. of articles	Percentage (%)
Message content	13	72.2
Message source	4	22.2
Message structure	1	5.5
Total no. of message factors <sup>a</sup>	18	100

<sup>a</sup> Multiple answers as some studies investigate several message factors.

Baloglu, 2011), choice experiments (e.g., Wehrli et al., 2014), and quasi-experimental designs (e.g., Steckenreuter & Wolf, 2013). There are very few theoretical articles. Antimova, Nawijn, & Peeters (2012) provide a theoretical discussion on the awareness/attitude-behaviour gap. The authors find a lack of empirical evidence and of theoretical explanations for the gap and identify community level theories such as game theory and social practice theory as important future directions of research. The article also suggests expanding research on the change of attitudes, norms, and values towards behavioural change, which is backed by this review's findings. Hall (2016) criticises that social marketing interventions in tourism are not (sufficiently) grounded in theory and, therefore, lack effectiveness. The author proposes that research should be more theory-led to learn about the mechanisms that promote effective interventions, which supports this review's findings on sustainability communication.

Exploratory case-study research and qualitative research methods (e.g., focus groups) are also under-represented but began to emerge in 2017 and largely as part of multi-method approaches. The acknowledgement of the need for more innovative methods is further reflected in observations/ethnographies (e.g., Warren, Becken, & Coghlan, 2017) or eye-tracking (e.g., Babakhani et al., 2017), which have recently emerged in the literature (JOST special issue, 2017).

#### 4. Discussion and recommendations for future research

This review provides a broad understanding of the current status of research on sustainability communication in tourism. Fig. 4 summarises its key findings.

In summary, extant research on sustainability communication is dominated by a focus on hotel contexts and environmental sustainability, and a lack of studies on personal communication channels and message-related issues. As far as the outcomes of sustainability

**Table 6**  
Outcomes of sustainability communication (n = 82).

Evaluation of outcome	Type of outcome	No. of articles	Percentage (%)
Positive	Behavioural change in tourists (en route)	18	22.0
	Pro-sustainable travel choice	12	14.6
	Intention to purchase/to book/to visit	8	9.8
	Attitude change	7	8.5
	Behavioural change in businesses	7	8.5
	Behavioural change in all stakeholders	4	4.9
	Intention to revisit	3	3.7
	Awareness of sustainability	3	3.7
	Word of mouth/recommendations	2	2.4
	Image effects	1	1.2
	Intention to pay a premium	1	1.2
	Behavioural change in employees	1	1.2
	Behavioural change in residents	1	1.2
Negative	Attitude-behaviour gap	3	3.7
	Lack of awareness	1	1.2
		(4)	(4.9)
Mixed	Image effects	2	2.4
	Purchase decision	1	1.2
		(3)	(3.7)
Neutral	Different forms of perception	3	3.7
	Segmentation	3	3.7
		(6)	(7.3)
Total <sup>a</sup>		82	100

<sup>a</sup> Multiple answers are included because some studies measure more than one type of outcome but theoretical, conceptual and review articles are excluded from this analysis.

**Table 7**  
Theories used in empirical research on sustainability communication and its effects.

Theory/discipline	No. of applied theories	Percentage (%)
Communication studies and education	(18)	(81.7)
Theory of planned behaviour Ajzen (1991)	4	18.2
Elaboration likelihood model Petty and Cacioppo (1986b)	4	18.2
Information processing theory Chaiken (1980); Petty and Cacioppo (1986a)	2	9.1
Construal level theory Liberman and Trope (1998)	2	9.1
Cognitive dissonance Festinger (1957)	1	4.5
Persuasion theory Petty and Cacioppo (1981)	1	4.5
Message framing theory cf. prospect theory: Kahneman and Tversky (1979)	1	4.5
Regulatory focus theory Higgins (1997)	1	4.5
Realist evaluation theory Pawson and Tilley (1997)	1	4.5
Experiential learning theory Kolb and Fry (1975)	1	4.6
Sociology	(3)	(13.6)
Self-identity Giddens (1991)	2	9.1
Social exchange theory	1	4.5
Sociology/politics	(1)	(4.6)
Legitimacy theory Suchman (1995)	1	4.6
Total number of theories applied	(22)	(100)
Total number of studies using theory	22	23.4
Total number of studies using no theory	72	76.6
Total number of studies <sup>a</sup>	94	100

<sup>a</sup> Multiple answers included – some studies use more than one theory.

**Table 8**  
Research methods.

Research design	Research method	No. of articles	Percentage (%)
Quantitative		(44)	46.8
	Surveys	23	24.5
	Content analysis	9	9.6
	Experimental designs	8	8.5
	Quasi-experimental designs	1	1.1
	Conjoint analysis	1	1.1
	Choice experiment	1	1.1
	Eye-tracking	1	1.1
Qualitative		(19)	20.2
	Content analysis	11	11.7
	Interviews	8	8.5
Mixed		(15)	16
Review		(1)	1.1
Theoretical		(2)	2.1
Conceptual		(13)	13.8
Total		94	100

marketing communications are concerned, their role in the attitude-behaviour gap has not been fully understood. Overall, the state of the art is characterised by a superficial understanding of sustainability communication in tourism, grounded in a very limited application of theory and a set of research methodologies that is insufficient to further develop our practical and theoretical understanding of how to design effective sustainability messages.

In light of the findings from this review, we will derive our recommendations for future research (Fig. 5).

#### 4.1. Engaging in message effectiveness through a holistic approach to sustainability communications

##### 4.1.1. Considering the peculiarities of different tourism product types and their related communication channels

Given that communication strategies are most effective when they fit the product type and its peculiarities (Kotler et al., 2010), further research may deal with the marketing of sustainable tourism products and their related communication channels other than green hotels since marketing solutions for green hotels are not necessarily adequate for other tourism products. This particularly applies to the study of more

complex multi-sectoral products such as bundled tour operator packages and the products of tour operator partners such as airlines, travel agencies, and cruise lines; it also applies and to green events or visitor attractions. As mass market and specialist tour operators have considerable market power in the production and marketing of sustainability options, with specialist tour operators adopting a pioneering role (Schwartz, Tapper, & Font, 2008; Sigala, 2008), this is an important research strand. Overall, we may benefit from more research into how sustainability information is conveyed in personal channels of communication (e.g., travel agents, tour guides, sales representatives) but also in non-personal media (e.g., tour operator catalogues, advertising brochures, broadcasting) as well as in online and social media. While many studies have revolved around communicative practices en route, aimed at the behavioural change in tourists in the destinations, future research would particularly profit from investigating channels relevant to the pre-purchase stage of travel.

##### 4.1.2. Challenging the communication of environmental, economic, social, and cultural sustainability

A one-sided focus on the marketing of environmental sustainability attributes is another reason why communication has not been as effective as it could be. However, communicating sustainability, by definition, is a more complex concept that can more fully exploit the potential of all four types of sustainability product attributes to be communicated (as added value) to the consumer in order to distinguish the product from conventional offerings. While recent publications (e.g., JOST special issue) have acknowledged the significance of such a holistic approach to sustainability marketing, it is still in its infancy.

##### 4.1.3. Developing message factors towards target-group specificity

The selection of adequate message factors is an important basis for enhancing a message's impact on an audience (Kotler et al., 2010). Such knowledge, moreover, may contribute considerably to increasing tourism practitioners' technical competence to design more effective sustainability messages. Thus, we suggest future research to more deeply examine the impacts of:

- message contents, including different sustainability attributes (environmental, social, economic or cultural); sustainability topics (local food, energy and water saving, carbon offsetting, local

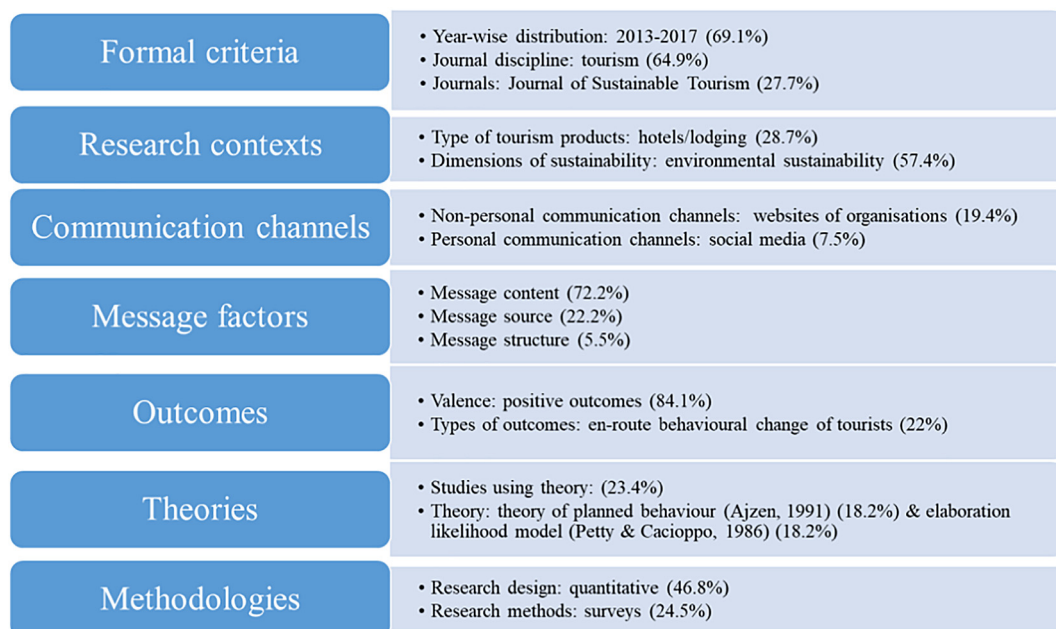


Fig. 4. Summary of the key review findings.



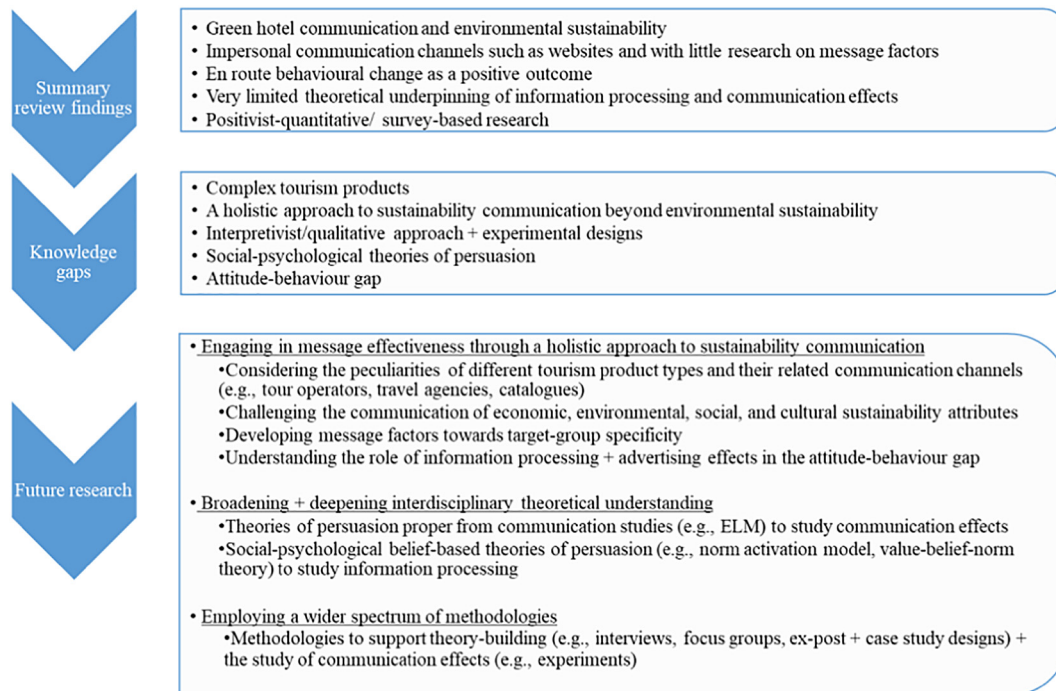


Fig. 5. Towards future research on sustainability communication in tourism.

purchasing or local employment, protecting cultural heritage or management-related issues); message appeals: rational or emotional appeals, moral, fear or guilt-producing appeals (Belz & Peattie, 2012); indicators of symbolism and status or appeals to hedonism and a “sustainable counter-identity” (Hibbert et al., 2013, p. 1012); personal benefits or societal goals (Villarino & Font, 2015); different levels of spatial, temporal, and personal distance; increasing the credibility of messages and its effects on reputation and image (Line et al., 2016)?

- message structure, including denotative or connotative language, active or passive voice, explicit or implicit depictions, one-sided or two-sided lines of argumentation (Villarino & Font, 2015); and
- message design, including layout aspects: pictorial, written, or spoken information; position, size or format of sustainability topics in travel catalogues or on webpages.

Research into message factors will also serve the purpose of creating more target-group specific messages (Kotler et al., 2010). The importance of consumer segmentation for effective sustainability communication is addressed in the literature (e.g., Dolnicar & Matus, 2008) so that we recommend further research in terms of:

- demographics, including age or age group, gender, level of education, income, etc.;
- personality traits, including guilt-proneness; environmentally-friendly attitude; sustainable worldviews, e.g., NEP scales or self-efficacy; etc. (Line et al., 2016);
- different levels of involvement, including level of travel experience (first time customer or repeat customer), and customer type (high involvement or low involvement with the type of tourism product and sustainability); information seeking behaviour (active or passive); preferred source type; cognitive effort; prior knowledge of sustainability; motivation and ability to study travel information;
- different segments in tourism, including different international markets; different forms of travel (e.g., cultural tourism, adventure and sports, ecotourism, etc.); individual or group travel; mass market or specialist tour operator products.

#### 4.1.4. Understanding the attitude-behaviour gap

Finally, the effects of sustainability communication on consumer behaviour are not fully researched and have produced inconsistent findings. However, this is an important question for tourism companies which develop persuasive communication strategies to generate positive commercial outcomes (e.g. willingness to pay, intention to pay a premium, image effects, or post-purchasing behaviour). This review's findings underline that the attitude-behaviour gap in sustainable tourism is under-researched theoretically and empirically (e.g., Antimova, Nawijn, & Peeters, 2012). This particularly applies to contextual factors, and the role of sustainability communication, both of which have yet to be investigated in the attitude-behaviour gap. Since attitude and attitude change are considered key to behavioural change, a novel avenue of research to examining how consumers process sustainability information would be to apply ‘belief-based attitude-behaviour theories’ (O’Keefe, 2016) from social psychology.

#### 4.2. Broadening and deepening interdisciplinary theoretical understanding

The review reveals that extant research has applied theory to a very limited degree, with only 20 studies grounding their empirical data in theory. This shows that our theoretical understanding of consumers' information processing and of communication effects is still rather on a surface level backs Wehrli et al.'s (2014) notion that tourism research lacks a ‘concrete scientific understanding’ of sustainability communication. While the advancement of theory is a major aim of tourism researchers, practitioners may also benefit from such progress (Font & McCabe, 2017), given that theory-led communication strategies are most effective in achieving behavioural change (Michie et al., 2008) for sustainability. Building upon recent developments in research that focus on the formal testing of theory in their studies and connect the development of interventions to theory (e.g., JOST special issue), we suggest that theoretical perspectives be broadened. An interdisciplinary research agenda grounded in communication studies, social psychology, and sociology would allow for a more complete understanding of information processing, communication effects, and the interplay of message factors and recipient characteristics, which is crucial for the design of effective sustainability marketing.

#### 4.2.1. Understanding communication effects

Future research will benefit from the potential of persuasion theories to explain what kinds of messages are effective. More precisely, this will involve the more ample use of message framing theory, construal level theory, and regulatory focus theory. While message framing theory provides information about the valences messages need to adopt in their framing, the other two theories may enhance our knowledge of how to respond to an individual's mental representations, variations in perception, and anchor points in sustainability information. The complementary use of information processing theory, and the more ample use of the ELM as an integrative framework of persuasion, would deliver additional insights into the interplay of recipient characteristics, message factors and other external factors in the uptake of sustainability information. Furthermore, these theories explain (cognitive) variations between consumers when processing sustainability information, which is important for communication strategies when enhancing message effectiveness. Another research strand from communication studies is semiotics, which is helpful for the study of signs and symbols in the conveyance of sustainability information. Agenda-setting theory places emphasis on the role of mass media (e.g., broadcasting) in sustainability communication, which is a topic of concern particularly for the marketing of larger tourism companies.

#### 4.2.2. Understanding information processing

To investigate information processing and the causal determinants that guide perceptions and behaviours, we propose the wider employment of social-psychological theories as one avenue of future research. Their use is strongly recommended to deepen our theoretical understanding of how and why tourists process sustainability information at the point of purchase. We also encourage the application of the norm activation model (Schwartz, 1977) and the value-belief-norm theory (Stern, Dietz, Abel, Guagnano, & Kalof, 1999) for their special potential in explaining the influence of values and personal norms as well as feelings of responsibility and awareness in the uptake of sustainability information about the negative impacts of tourism. There remain further knowledge gaps as to the use of attribution theory (Heider, 1958), self-efficacy (Bandura, 1977), and cognitive dissonance (Festinger, 1957) in this respect. Since attitude and attitude change are considered key to behavioural change (O'Keefe, 2016), it will be a novel and important avenue of research to apply such 'belief-based attitude-behaviour theories' (O'Keefe, 2016) from social psychology for the study of the attitude-behaviour gap in sustainable tourism.

Additionally, modern and postmodern sociological theories may contribute to explaining travel choices through the lens of consumerism and commodification. Also largely unexplored is how well sustainability communication can present sustainable tourism products as symbolic functions that give people a sense of status or self-identity (Bauman, 1998; Giddens, 1991) or "a counter-identity" (Hibbert et al., 2013, p. 1012) suggesting a positive status for those who travel sustainably (Hibbert et al., 2013); make social inequalities visible (Bourdieu, 1984); help create meaning (Baudrillard, 1998); and respond to the concepts of (sustainable) lifestyles and social practices (Warde, 2005).

#### 4.3. Employing a wider spectrum of methodologies for theory-building and the study of communication effects

The review indicates that current methodologies are insufficient to fully capture communication effects and are not supportive of theory development. This is due to a limited portfolio of research methods and an overemphasis on survey-based research and content analysis. While surveys are useful and necessary for hypothesis testing and indicative of trends (Yilmaz, 2013), their data may be prone to bias and hypothetical assumptions. Hence, we recommend a three-way strategy. First, we encourage the wider use of methods that are capable of testing different communicative stimuli on their receptivity, such as experimental

designs or choice experiments. Eye-tracking or conjoint analysis may inform us of the relative importance attributed to different sustainability aspects. Secondly, exploratory case studies and interpretivist/qualitative approaches have their merits for theory advancement (Eisenhardt, 1989; Yin, 2003). Building upon the experience of advertising research (O'Keefe, 2016), interview techniques and focus groups are fruitful for the study of how and why consumers process sustainability information and for identifying the drivers and barriers in its uptake. Thirdly, rethinking research designs towards ex-post investigations with sustainability customers is another direction that will allow us to learn from best case scenarios, which are not limited by hypothetical assumptions.

### 5. Conclusion

This article has identified sustainability communication as an emergent topic in tourism research. In this study a literature review was conducted to respond to the call by researchers and practitioners for a deeper theoretical and practical understanding of how to create effective sustainability communications. A systematic review is a particularly appropriate way to study the effectiveness of interventions and to account for the conditions that frame sustainability communication in tourism, namely, the multidisciplinary, fragmented and complex nature and evidence base. It is revealed that the state of the art in tourism research is a major reason why sustainability messages are not as effective as they could be. The theoretical understanding of information processing and effective communication design is limited, while the current set of methodologies is insufficient in quality and quantity for the study of such effects. Given that communication strategies can only be successful when they fit the product type, a one-sided focus on green hotel contexts and environmental sustainability has impeded a holistic approach to the marketing of sustainability and solutions applicable to a wider range of products. The neglect of research on personal communication channels, despite their important role in tourism, and on the design of message factors further explains the current inability to convey sustainability information. This review, therefore, offers wider implications for theory and practice by providing a guide for future research based on the critical knowledge gained from the article's review.

In an attempt to contribute to a more grounded scientific understanding of sustainability communication, this study proposes an interdisciplinary research agenda that broadens and deepens theoretical perspectives on information processing and effective communication design. Drawing upon communication studies, this would involve social-psychological 'belief-based models of persuasion' (e.g. norm activation model, value-belief-norm theory) to investigate consumer information processing of sustainability information in the attitude-behaviour gap. 'Theories of persuasion proper' (O'Keefe, 2016), such as the ELM, have huge potential for integrating message factors and consumer characteristics in a future research agenda for persuasive sustainability communication. Such research will identify the causal determinants of behaviour and the message designs needed to target these factors which are a crucial knowledge upon which tourism marketers can build for producing more effective sustainability messages.

Another way of engaging in message effectiveness is to develop messages that account for the peculiarities of different tourism products and their related communication channels. Practitioners could draw upon insights into message factors that may contribute to a technical understanding of target-group specific message design. Accompanied by the innovative potential of experiments, conjoint analysis or new methods such as eye-tracking, research can contribute to understanding the relative importance of sustainability attributes to customers, to predict their choices, and to study the effectiveness of different communicative stimuli. Research designs that prefer an ex-post design and exploratory case studies involving qualitative research methods would support theory-building and a deeper understanding of consumer

beliefs that facilitate or impede sustainable travel choices.

This review is subject to some limitations. The present study cannot fully avoid biases since we excluded literature written in other languages or unavailable in electronic databases. Furthermore, it is a limitation of systematic reviews that they can only deliver partial solutions to practical problems (Petticrew & Roberts, 2006). Therefore, we suggest that future studies integrate findings from other fields in which sustainability communication has been researched to create a broad interdisciplinary knowledge base upon which tourism researchers and practitioners can build in their research and daily practices.

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