



An overview of mindfulness theories applied to tourism: systematic review update and bibliometric analysis

Vivien Iacob^{1,2} · Saúl Neves de Jesus^{1,2} · Cláudia Carmo^{1,3}

Accepted: 21 August 2023 / Published online: 22 September 2023
© The Author(s) 2023

Abstract

This paper presents a systematic review update regarding mindfulness theories applied to tourism, complemented with a bibliometric analysis. Scientific studies listed in the WOS, SCOPUS, PubMed and PsycInfo databases were analysed using PRISMA guidelines. Twenty-five studies were selected for review from 670 records identified. In recent years, mindfulness has proved to be a promising area of research in tourism, and the number of published studies is increasing. The findings reveal a positive association between mindfulness and tourism experiences, suggesting that tourists who adopt states of mindfulness during their travels benefit from increased pro-environmental behaviours, satisfaction levels, and memorable experiences, leading to destination loyalty. This study provides an in-depth overview of the literature, and helps redress the lack of bibliometric studies in this field. It also identifies common areas of current research interest, offers insights into commonly studied themes, and seeks to raise awareness about the relevance of the concept of mindfulness in tourist experiences and well-being by suggesting implications for research and tourism management.

Keywords Bibliometric analysis · Mindfulness · Systematic review · Tourism · Tourist experience

1 Introduction

Mindfulness, originated in the meditation practices of Buddhism, was introduced into Western culture, and has received increasing attention from researchers, particularly in terms of psychological functioning and well-being. Kabat-Zinn (1982) pioneered the introduction of meditative mindfulness (MM) practices to the West by implementing a Mindfulness-Based Stress Reduction (MBSR) program. After preliminary results showing a decrease in mood and psychiatric disorders in chronic pain patients, the promising

✉ Vivien Iacob
vivien_jacob@hotmail.com

¹ Department of Psychology and Educational Sciences, University of Algarve, Faro, Portugal

² Research Centre for Tourism, Sustainability and Well-Being (CinTurs), Faro, Portugal

³ Research Centre for Psychology (CIP), Faro, Portugal

outcomes inspired several researchers to further develop and explore the potential benefits of mindfulness-based interventions (MBI). For instance, incorporating mindfulness into contemporary theories meant that secular interventions such as Mindfulness-Based Cognitive Therapy (MBCT; Segal et al. 2002) emerged as effective in relieving depressive symptoms and improving well-being. There are also many other MBIs for different psychological disorders and diverse populations.

Beyond interest from a psychology perspective, mindfulness theories are being extended to other fields, contributing to new approaches and interventions. Two theories frequently stand out in the literature: meditative mindfulness (MM), defined by Kabat-Zinn (2014) as an awareness that arises from paying attention to the present moment without judgement, and socio-cognitive mindfulness (SCM), as a state of openness to novelty in which creating new categories allow individuals to consider circumstances from different perspectives (Langer 2016).

Conceptualisations of mindfulness have been slightly inconsistent among studies. Mindfulness is the psychological ability to stay present in one's experience with a non-judgmental or accepting attitude, arousing a friendly openness and curiosity (Kabat-Zinn 2005). It has been seen as both a psychological state or mode of awareness achieved through mindfulness practices (e.g., formal or informal meditation), and a character trait as a predisposition to be mindful in daily life (Brown and Ryan 2003). The capacity to be mindful in everyday life is considered dispositional mindfulness (DM), believed to occur naturally in the general population (Brown and Ryan 2003). Some authors argue that there is a conceptual difference between DM and mindfulness that is trained and cultivated (Rau and Williams 2016). This inconsistency might be because Eastern and Western traditions have emphasised different aspects of the mindfulness concept, leading to a lack of conceptual clarity.

Nevertheless, the literature presents interesting empirical findings. Topics such as mental health and the benefits of mindfulness have received significant attention among researchers. Unfortunately, the COVID-19 crisis further increased depressive and anxiety symptoms. Beshai et al. (2022) corroborated this idea and suggested that depressive symptoms and anxiety positively correlate with high COVID-19-related fears. Furthermore, the results demonstrated that high levels of DM and self-compassion help mitigate COVID-19-related fears and perceived consequences. Mindfulness has also proven its effectiveness with health professionals by reducing depression, anxiety and stress and increasing positive effects, such as self-compassion and well-being (Kriakous et al. 2020; Scheepers et al. 2019). In addition, previous systematic reviews and meta-analysis studies reported significant positive effects, and suggested that mindfulness might improve positive psychological outcomes (Howarth et al. 2019; Taylor et al. 2021; Zenner et al. 2014). Tan et al. (2019) demonstrated that new technologies have also been a valuable tool in providing the general population easy access to MBI through mobile phone applications by showing a significant increase in mindfulness skills and decreased stress and depressive-related symptoms.

The field of neuroscience has devoted different investigations to demonstrate the positive effects of mindfulness on functional brain connections. Melis et al. (2022) developed a systematic review and concluded that emotion regulation improved after MBI. Another brain imaging study suggested that DM is correlated with higher neuronal activation in brain regions associated with self-regulation (Rau and Williams 2016).

Different bibliometric studies were also conducted in the field of mindfulness. For instance, Baminiwatta and Solangaarachchi (2021) used bibliometric methods to present historical developments, active areas of research, and emerging trends in the previously published literature on mindfulness. Another bibliometric study gave an in-depth

understanding of the history of mindfulness and identified the trends in the articles published in the field (Toniolo-Barrios et al. 2020).

Given the interest in further discovering the efficacy of mindfulness in different contexts, researchers in tourism have been exploring the potential benefits that may arise when tourists are mindful during travel. International tourism has increased along with social and economic changes, including improved national income, quality of life, and leisure time (Seok et al. 2021). As tourism is changing from a focus on economy to one on experience, tourists search for a more personal and transformational experience. Gupta et al. (2022) argue that tourist participation positively affects well-being and satisfaction levels. Tourists prefer to be experiencers rather than merely observers or interpreters. As active participation in the experience affects cognition and emotions, it is essential to understand the psychological perspective on the tourism experience (Campos et al. 2018). Therefore, researchers must change perspectives to approach tourists as individuals and promote more personal and significant experiences, improving well-being and quality of life (Garcês et al. 2018). While each experience is unique and individual, understanding the cognitive psychology involved in a tourism experience is essential to understand the emotional responses and decision-making processes of tourists (Scott and Campos 2022). Psychological factors may be considered when investigating the determinants of tourism consumption and leisure, because they can have an essential role in tourists' destination selection and decision-making (Xu and Liu 2022).

The main arguments for adding mindfulness to tourism are based on an individual's need for an improved quality of life. Especially in modern society, the mental well-being of tourists stands out as an important issue (Chua et al. 2020). Some individuals consider leisure travel a vital feature of life, and when they are on holiday and planning a trip, they tend to search for places where they can relax and escape the stress of everyday life. There are several benefits of vacation, such as improving physical and mental health, enhancing happiness and quality of life, and adding a healthy and effective lifestyle (Chen and Petrick 2013). Many factors affect happiness, and most studies investigate these factors (Güzel and Görmüş 2022). For instance, Seligman et al. (2005) states that happiness is a very complex concept, and given that, subjective well-being can be assumed as a synonym. According to Burns and Crisp (2021), happiness is subjective well-being's first dimension, combined with mental health, and an important outcome of quality of life. In tourism, well-being is associated with happiness, quality of life and satisfaction. There is increasing interest in travel opportunities that will assist tourists in restoring and maintaining their physical and mental health along with well-being. Thus, tourism researchers intend to acknowledge how tourism services affect tourists' well-being (Gupta et al. 2022).

Some researchers in psychology and tourism have highlighted the importance of being a mindful individual (e.g., Haobin et al. 2021; Prentice et al. 2021). Mindfulness could be identified as a tourist's awareness and non-judgment concerning their thoughts and perceptions about a destination, which affects their behavioural and cognitive responses (e.g., Kang and Gretzel 2012; Loureiro and Fialho 2016; Loureiro et al. 2019a, 2019b). In this vein, mindfulness may be essential to the promotion and enhancement of well-being.

Since mindfulness applied to tourism is a relatively new research subject, there are few publications in this area, and to our knowledge, there is no bibliometric study in this field. However, different studies conducted in tourism used bibliometric methodology to trace the structure of the area. As the topic of sustainability has been receiving increasing attention from researchers, Garrigos-Simon et al. (2018) developed a bibliometric study to present an overview of the studies exploring tourism and sustainability. Another research on the same theme employed a bibliometric analysis using VOSviewer to analyse publications

about sustainability and tourism marketing (Cavalcante et al. 1997). Further, Bastidas-Manzando et al. (2020) bibliometric study traced smart tourism destinations' past, present, and future. Aliyev et al. (2018) performed a bibliometric study with content analysis to examine how scholarly research on luxury brand marketing has evolved in the twenty-first century. Additionally, Block et al. (2019) presented a bibliometric study to map the field of religion and entrepreneurship.

As it was possible to identify in the literature, different systematic reviews and bibliometric studies have been implemented both in the field of mindfulness and tourism, but separately. According to Moral-Muñoz et al. (2020), bibliometrics has become essential for evaluating and analysing scientific results. An example of this is the different studies that have been carried out. As the preference for bibliometric studies is increasing (Cavalcante et al. 1997), mindfulness applied to tourism offers an opportunity to identify the most relevant topics in the literature and suggest future directions.

Due to the relevance of bibliometric analysis for the literature (Garrigos-Simon et al. 2018), this study aims to present the field's current state of knowledge and provide an in-depth update summary with a bibliometric analysis of the literature on the connections between mindfulness theories and tourism. Specifically, this review focuses on the following research questions: What is state of the art in the field of mindfulness applied to tourism? Can we identify the main topics studied by thematic clusters? How have publications in this field evolved over the years? Which countries have been doing more research? Which journals have been publishing articles related to mindfulness and tourism? What were the most used mindfulness theories and methods in the studies? Which themes need more attention and further research?

This systematic review involved 25 articles and provided an overview of the field's state of the art. Although there are few studies in this field, there has been a growing interest in recent years to explore this issue. Thus, it becomes essential to present this study in which an analysis of the primary studies developed in this area is presented. The findings of this study can contribute to the knowledge of this field and can be helpful for practitioners and researchers by offering potential trends and directions for future research.

2 Methodology

Systematic reviews with bibliometric analyses are essential to identify and map existing knowledge in the literature, and offer collective insights. In different areas of social science, systematic literature reviews with bibliometric methodology are commonly employed methods to summarise scientific knowledge (Fisch and Block 2018). This systematic review included bibliometric methods and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 guidelines (PRISMA 2020; Page et al. 2021) in order to analyse research works related to mindfulness in tourism. The bibliometric methodology is essential to provide a categorised view of a field and relies on objective criteria for classifying and analysing publications (Cavalcante et al. 1997). This study considered the eight points recommended by Block and Fisch (2020) for bibliometric studies.

A systematic literature search was conducted in four databases, Scopus, Web of Science, PsycInfo, and PubMed, to locate relevant articles. These databases were chosen based on their wide acceptance in the social sciences. Empirical research papers evaluating connections between mindfulness and tourism were included on the basis of the following criteria: (a) search or related terms included in the title, abstract, and

keywords; (b) articles in English or with an available translation; (c) quantitative studies; (d) peer-reviewed articles; (e) mindfulness as a variable under study; and, (f) tourists as participants. Criteria for exclusion included publication as grey literature, in order to refine the data further and ensure the quality of the articles.

In the first stage, a keyword search was made for relevant studies. The search terms were “mindfulness or meditation” and “tourism or tourist or travel”. The Boolean operator “AND” was used between words, ensuring both were included in the search, and the Boolean operator “OR” captured studies using different terminology. The truncation symbol “*” was used (mindful*; touris*) allowing the inclusion of words with the same origin. The following search formula was used: (“mindful*” OR “meditate*”) AND (“touris*” OR “travel*”) to obtain a wide variety of terms used in titles, abstracts, and keywords. The second stage involved a manual check of reference lists with identified and relevant journals in tourism and mindfulness.

In the next stage, during the initial search, 670 records were identified, which reduced to 444 after the removal of duplicates. The titles and abstracts of the 444 records were screened for relevance, and 326 were excluded. Finally, 118 full-text articles were assessed for eligibility. Of these, 103 articles were excluded since they did not evaluate mindfulness or were qualitative research, reviews (rather than systematic literature review), or conceptual papers, or the population did not include tourists, and 10 were the same articles already included in the previous review. Fifteen new studies were added, and twenty-five were considered for the review. The selection process for the systematic literature review is presented in the PRISMA 2020 flow chart (Fig. 1).

All articles’ titles, keywords and abstracts were carefully reviewed and imported to Mendeley, which is specific software designed to manage bibliographies. A summary table was also created in Microsoft Excel to include bibliographic details such as information about the author, year, country, article and journal title, abstract, keywords, theoretical framework, statistical tests, characteristics of the research sample, the aim of the study, variables, instruments, and the main findings.

As bibliometric studies rely on quantitative and objective approaches to summarise the structure of a field (Block and Fisch 2020), descriptive analyses were used to examine the characteristics of the studies, the evolution of articles published by year, and the distributions per country and journal. Analysis and graphic representations help academics and professionals better understand the research structure in the field (Cavalcante et al. 1997).

A mapping technique called visualisation of similarities (VOSviewer) was used in this study, as it is a software that allows to present bibliographic data through category maps graphically. van Eck et al. (2010) developed this relatively easily accessible platform to create and display bibliometric relationships between variables. Additionally, different studies have demonstrated its potential and reliability as a tool to conduct bibliometric studies and especially to analyse and map new fields (Garrigos-Simon et al. 2018). For instance, Kirby’s (2023) research used the co-occurrence method and found hundreds of published studies employing VOSviewer. Other authors highlight that it is one of the best programs for performing a scientific mapping analysis (Moral-Munoz et al. 2019; van Eck et al. 2010).

Visualisation has proven to be a powerful approach for analysing bibliometric networks, such as co-occurrence relations between terms (van Eck and Waltman 2014a, 2014b). VOSviewer provides distance-based visualisations of bibliometric networks and allows the text mining method for content analysis by extracting keywords, titles and abstracts (van Eck and Waltman 2014a, 2014b). A bibliometric network consists of nodes (e.g., keywords) and edges, where the distance between nodes approximately

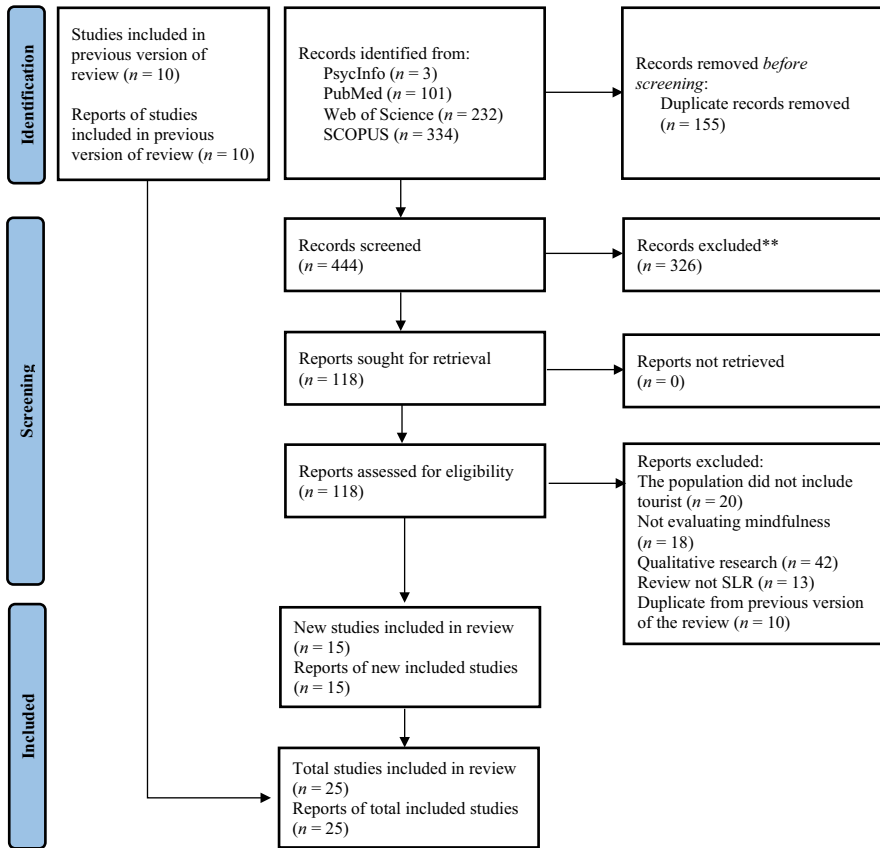


Fig. 1 PRISMA 2020 flow diagram. Note: Adapted from Page et al. (2021) Note: Adapted from "The PRISMA 2020 statement: an Updated Guideline for Reporting Systematic Reviews", by Page et al., 2021, British Medical Journal, 372(71), p.5 (<https://doi.org/10.1136/bmj.n71>).

indicates their relatedness. VOSviewer, by default, assigns the nodes in a network to clusters. A cluster is a set of closely related nodes whose colours indicate the cluster to which a node has been assigned.

The identification of relations within networks of publications is based on the software’s algorithm presented below, a smart local moving algorithm introduced by Waltman and van Eck (2013).

$$V(x_1 \dots x_n) = \sum_{i < j} s_{ij} \|x_i - x_j\|^2$$

subject to the constraint $\frac{2}{n(n-1)} \sum_{i < j} \|x_i - x_j\| = 1$

VOSviewer displays nodes in a two-dimensional space and minimises the function where n represents the nodes in a network, xi represents the location of node i in two-dimensional space and $\|x_i - x_j\|$ represents the Euclidean distance between nodes i and j.

VOSviewer generated a co-occurrence map based on text data and helped us identify clusters with related terms. The titles, keywords and abstracts of the 25 articles previously imported to Mendeley were compiled into a single RIS file. This file was then imported into VOSviewer version 1.6.18 to construct and visualise bibliometrics networks (van Eck and Waltman 2014a, 2014b). Finally, a co-occurrence map with full counting represented networks of terms of the scientific publications represented in 6 clusters. Accordingly, by visualising the mapping and clustering results, we proceeded to organise the studies by themes and then analyse the structure of the field.

3 Results

3.1 Publications by year

The selected articles about mindfulness in tourism were published between 2004 and 2021, and revealed a growing number of publications over time (Fig. 2). The first empirical study was published in 2004, but the number of publications only started to increase significantly after 2018. Studies doubled in 2019 and maintained an increasing trend compared to previous years. Most papers included in the review were published between 2020 and 2021. For instance, 2020 had the highest number of published papers, indicating an increasing interest in investigating mindfulness effects on tourists in recent years.

3.2 Journal subject focus

The papers about mindfulness applied to tourism were distributed in 19 different journals, mainly in the genre of tourism. Most articles were published in top-ranking journals such as the *Journal of Travel and Tourism Marketing*, with the most significant number

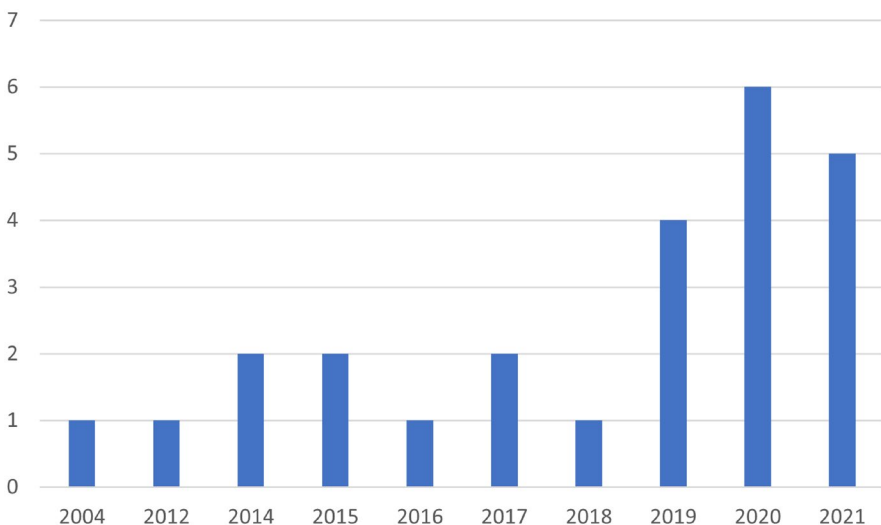


Fig. 2 Number of publications by year

of articles in the same journal (16%), followed by the Journal of Heritage Tourism (8%), Journal of Hospitality and Tourism Management (8%) and Journal of Hospitality Marketing and Management (8%). Overall, 40% of journals published more than one article, and 60% included only one study each (4%). Table 1 shows that most of the studies conducted in this field have been published in Quartile 1 journals, indicating the articles' high quality.

3.3 Geographic locations

Most studies that explored mindfulness connections with tourism were concentrated in the USA (24%). The second largest groups of studies were undertaken in Australia (12%), Korea (12%), and Portugal (12%). A few studies were conducted in China (8%) and Malaysia (8%). The other listed countries only included one study each (4%) (Table 2). The map presents the key studied locations (Fig. 3), and shows the USA as the leading country in number of studies conducted. The studies are relatively well dispersed across different countries. Despite the dispersion, a concentration of studies is noticeable in southern Asia, reflecting a greater tendency to conduct more studies about mindfulness in tourism in Asia. This strength could be explained by the expansion of interest in the Buddhist tradition, which is dominant in the area. Finally, it can be seen from the map that there is a gap in studies about this topic in European countries.

Table 1 Number of publications by journal

Journals studied	Quartile (SJR)	Number of articles	Percentage
Journal of Travel and Tourism Marketing	Q1	4	16
Journal of Heritage Tourism	Q1	2	8
Journal of Hospitality and Tourism Management	Q1	2	8
Journal of Hospitality Marketing and Management	Q1	2	8
International Journal of Tourism Research	Q1	1	4
Tourism Management	Q1	1	4
Journal of Travel Research	Q1	1	4
Cornell Hospitality Quarterly	Q1	1	4
Current Issues in Tourism	Q1	1	4
International Journal of Hospitality Management	Q1	1	4
Journal of Vacation Marketing	Q1	1	4
Tourism Recreation Research	Q1	1	4
International Journal of Environmental Research and Public Health	Q1	1	4
The Service Industries Journal	Q1	1	4
Asia Pacific Journal of Tourism Research	Q1	1	4
Annals of Tourism Research	Q1	1	4
Travel and Tourism Research	N/A	1	4
Journal of Strategic Marketing	Q2	1	4
TEM Journal—Technology, Education, Management, Informatics	Q3	1	4
Total		25	100

Table 2 Number of publications by country

Country	Number of studies	Percentage
USA	6	24
Australia	3	12
Korea	3	12
Portugal	3	12
China	2	8
Malaysia	2	8
Dubai	1	4
Croatia	1	4
Cyprus	1	4
Austria	1	4
Fiji	1	4
Thailand	1	4
Total	25	100

**Fig. 3** Geographical distribution of publications

3.4 Application of theories and instruments

Although two studies did not present the theoretical mindfulness model followed (Jirojkul et al. 2021; Sie et al. 2021), the theories most commonly used by researchers were socio-cognitive mindfulness (SCM; $n=14$) followed by meditative mindfulness (MM; $n=9$). Two other studies employed the self-determined theory (SDT; $n=2$), and one adapted the mindfulness concept to the consumption theory ($n=1$) (Table 3). Most researchers used mindfulness theories as a theoretical basis for the studies. The SCM theory was given greater prominence in the studies developed, while the MM theory was not so studied.

The instruments employed to analyse the concept of mindfulness differed between studies. Some authors who followed the SCM theory used the mindfulness scale developed by Moscardo (1996) for tourism destinations (Barber and Deale 2013; Dutt and Ninov 2015; Tan et al. 2019; Taylor et al. 2017). In 2004 Frauman and Norman adapted Moscardo's scale (1996), and later other authors used the adaptation of this measure (Choe et al. 2014; Noor et al. 2014; Rubin et al. 2016; Taylor and Norman 2018; Ying et al. 2020). Three

Table 3 Theories applied by authors

Socio-Cognitive Mindfulness (SCM; Langer 1989)	Meditative Mindfulness (MM; Kabat-Zinn 1994)	Self-determination theory (SDT; Deci and Ryan 1985)
Frauman and Norman (2004)	Kang and Gretzel (2012)	Ying et al. (2020)
Barber and Deale (2013)	Lee and Kim (2018)	Sie et al. (2021)
Choe et al. (2014)	Chan (2018)	
Dutt and Ninov (2015)	Hwang and Lee (2019)	
Noor et al. (2014)	Akhshik et al. (2020)	
Rubin et al. (2016)	Cervinka et al. (2020)	
Loureiro and Fialho (2016)	Loureiro et al. (2019a, 2019b)	
Taylor et al. (2017)	Errmann et al. (2021)	
Loureiro et al. (2019a, b)	Haobin et al. (2021)	
Taylor and Norman (2018)		
Dharmesti et al. (2020)		
Tan et al. (2019)		
Ying et al. (2020)		
Prentice et al. (2021)		

other authors (Loureiro and Fialho 2016; Loureiro et al. 2019a, b; Prentice et al. 2021) applied Langer's Mindfulness Scale (LMS; Pirson et al. 2012). Lastly, Dharmesti et al. (2020) used five items of green mindfulness measure generated from the existing literature (Amel et al. 2009). Most studies used as a basis the scale specifically developed by Moscardo (1996) to assess the concept of mindfulness in the context of tourism.

Among the authors who followed the MM theory, two (Errmann et al. 2021; Haobin et al. 2021) applied the original instrument Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003), and two other authors adapted the same instrument to the tourism context (Kang and Gretzel 2012; Loureiro et al. 2019a, 2019b). Separately, one study (Hwang and Lee 2019) applied the Toronto Mindfulness Scale (TMS; Lau et al. 2006), Akhshik et al. (2020) used the Five Facet Mindfulness Questionnaire (FFMQ; Baer 2006), and Cervinka et al. (2020) employed the Freiburg Mindfulness Inventory (FMI; Walach et al. 2006). Finally, Lee and Kim (2018) applied the exhibition mindfulness items from Choe et al. (2014). Despite using different instruments, the authors who have followed the MM theory have all been implementing specific instruments to assess mindfulness. The authors following the MM stream were more focused on analysing mindfulness states and levels of individuals.

3.5 Statistical methods

Only empirical studies using quantitative methods were considered for this review as they present more robust results and allow a bibliometric analysis. The most commonly used analytic techniques were covariance-based structural equation modelling (SEM; $n=10$), variance-based SEM partial least square (PLS; $n=9$) and multivariate approaches (correlation analysis, confirmatory and exploratory factor analysis, hierarchical cluster analysis; $n=6$). Some studies also used bivariate techniques to complement the analytical methods

above (e.g., chi-squared test, analysis of variance—ANOVA, MANOVA). The most used statistical method was partial least squares structural equation modelling (PLS-SEM), as it allows the estimation of complex cause-effect relationships in path models with latent variables.

3.6 Sampling

All participants were tourists visiting different sites, such as nature parks, heritage sites, museums, and restaurants; hotel customers; exhibition attendees; or travellers departing from airports. The average number of participants per study was $n = 331$, with the lowest number of applicants $n = 50$ and the highest reaching $n = 1202$.

3.7 Thematic clusters analysis

VOSviewer helped us to have a graphic visualisation of the contents addressed in the papers.

The map visually presents the most prominent of the 546 words that occur, grouped into six clusters (Fig. 4). As expected, the most common word was “mindfulness,” represented as the main theme of studies, which occupies a central position on the map and presents its connections with different terms. This comprehensive analysis organises the articles based on the focus subjects. It offers an in-depth perspective on individual articles, and helped the researchers to identify the main terms used in tourism when applying mindfulness theories.

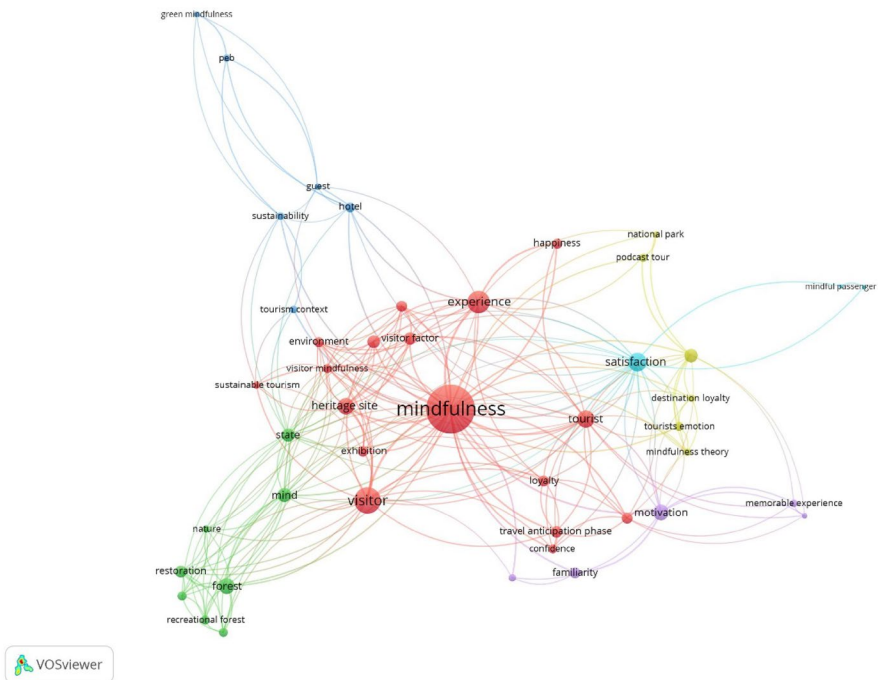


Fig. 4 Thematic clustering map

3.7.1 Cluster 1 (red): tourist experience

Tourism experiences have been a leading subject within tourism, and Cluster 1 represents their relevance by showing experience, tourist, and visitor as the main terms. The findings indicate that the mindfulness levels of tourists can strongly affect the quality of travel experiences. For instance, the role of mindfulness was highlighted based on its positive effect on the happiness of tourists, and its effect on the perceived value of the travel experience through components of the destination image (Loureiro et al. 2019a, b). These results align with Bigné et al. (2001), confirming the effect of destination image on the tourist experience. Tourists who adopt states of mindfulness during their travel experiences benefit from several positive outcomes. Some begin as early as the travel anticipation phase, when confidence levels increase and thus affect loyalty to the destination and positive evaluations of on-site and post-experiences (Choe et al. 2014; Taylor and Norman 2018). Exploring the effects of different media, namely exhibitions, guided tours, and printed materials, in enhancing mindfulness revealed that printed materials were the most effective communication tool in improving mindfulness among visitors (Noor et al. 2014). These results support previous literature suggesting that media should be surprising or unexpected, novel, and give the visitors the occasion to control the information to induce mindfulness (Moscardo 1996; Moscardo and Woods 2004). The visitor factors (high level of interest and visualisation) and communication factors (use of questions and multisensory media) used at heritage sites and exhibitions can improve a visitor's overall state of mindfulness (Tan et al. 2019). This finding corroborates previous studies and introduces the visitor factor concept, confirming its effects on mindfulness levels. Prior studies revealed that the mindfulness levels among visitors are affected by the communication factors at the sites (Frauman and Norman 2004; Moscardo 1996), but the visitor factors still need to be further studied. In line with earlier research that demonstrated mindfulness's mediating role in the association between brand experiences and environmental clues (Ngo et al. 2016), Haobin et al. (2021) suggested that mindfulness can mediate a customer's experience of perceived servicescape and brand experience.

3.7.2 Cluster 2 (green): nature-oriented activities

The positive effects that visiting and being in contact with nature have on health and well-being are well recognised (Cervinka et al. 2020). Healing places in a forest can improve health, well-being and increase connectedness with nature and mindfulness states (Pirgie et al. 2016). Mindful tourists visiting nature sites showed higher benefits and a preference for participation in nature-oriented activities. Several improvements were found when tourists visited recreational forests, including more positive mindsets, restoration, deepening the connection with nature and the woods, a decrease in negative moods and stress, along with an increase in mindfulness levels (Cervinka et al. 2020; Frauman and Norman 2004). These results corroborate other studies that emphasise that visits to natural environments, such as forests, are related to mood enhancement and well-being (Korpela et al. 2017).

3.7.3 Cluster 3 (dark blue): sustainability and pro-environmental behaviour

Mindfulness states could certainly raise tourists' awareness of sustainability issues and positively affect individual, environmental and social well-being. Wang and Kang (2019)

reported a relationship between pro-environmental behaviour, psychological states, and individuals' subjective well-being. In line with this, Chan (2018) indicates that being mindful makes tourists more concerned about others, and society, and more aware of their decisions and environmental consequences. Similarly, highly mindful tourists search for products and services with high ecological, emotional, and social benefits, revealing a preference for focused and direct information (Barber and Deale 2013; Taylor et al. 2017). A link between subjective well-being and sustainable ecological behaviour due to mindfulness practice has been previously studied (Jacob et al. 2009). Also, a positive correlation between mindfulness and pro-environmental behaviour was found (Barbaro and Pickett 2016). In line with these results, it is suggested that visitors with a high capacity for mindful thoughts and feelings also have high scores in pro-environmental behaviour (Akhshik et al. 2020; Jirojkul et al. 2021). The findings of studies conducted in hotels suggest that mindful hotel guests have more tolerance and protective intentions regarding nature, and that mindfulness traits and states both increase preferences for pro-environmental hotels (Barber and Deale 2013; Errmann et al. 2021). Green mindfulness, a concept proposed earlier by Chen et al. (2015), may thus be an engaging factor that can increase eco-friendly behaviours of tourists (Dharmesti et al. 2020).

3.7.4 Cluster 4 (light blue): tourist satisfaction

When tourists embrace mindfulness states, their experiences are closely connected to high satisfaction levels. In line with prior studies suggesting that customer satisfaction affects both commitment and trust (Garbarino and Johnson 1999), by exploring the effect of mindfulness on the satisfaction levels of tourists at airports, Prentice et al. (2021) suggested that service quality increases customer trust in airlines by moderating their mindfulness levels. More mindful passengers with increased conscious thoughts tend to be more critical of flight properties, and do not quickly build a committed relationship with the airline (Loureiro and Fialho 2016). Other findings suggest that mindfulness can affect public self-awareness positively, which then influences affective satisfaction and customer citizenship behaviour (Hwang and Lee 2019).

3.7.5 Cluster 5 (light green): destination loyalty

As graphically represented on the thematic map, the link between mindfulness and satisfaction affects a tourist's emotions and destination loyalty intentions (Rubin et al. 2016; Sie et al. 2021; Taylor and Norman 2018). The results are in line with the existing literature that documents the evidence for the influence of satisfaction as a key driver to loyalty (Zhang and Bloemer 2008). Kim (2017) suggests that new motivations are essential to a mindful visit, and destination loyalty is positively correlated in the long term with high satisfaction levels. Further results found that the human voices used in podcast tours produce a positive social context for significant interactions, affecting tourist experiences and stewardship. More enjoyable experiences at national parks are affected by increased mindfulness levels (Kang and Gretzel 2012).

3.7.6 Cluster 6 (purple): memorable experiences

In order to increase tourists' loyalty, some researchers have sought to study the antecedents of memory. It can be suggested that mindfulness and memories have a strong relationship.

According to the literature, attention plays an essential role in encoding memories and is also a key element of mindfulness. The intention to revisit a place is associated with positive memories of past travels, and mindfulness is an essential component that enhances a tourist's revisit intentions and memorable experiences (Lee and Kim 2018). Mindfulness may positively affect the formation and retention of memories, leading to novel insights. Thus, mindfulness and memories have a positive relationship, meaning that the more mindful tourists are, the more they will remember (Dutt and Ninov 2015; Lee and Kim 2018). Memorable experiences were also found to mediate the relationship between motivation and life satisfaction in senior tourists (Sie et al. 2021). Ying et al. (2020) found that mindful visitors are more self-oriented, and work towards inner enjoyment and fulfilment. The results also suggest that mindfulness is positively affected by a tourist's levels of intrinsic motivation, combined with cognitive and psychological familiarity. Mainly, the results are consistent with prior research suggesting that mindfulness positively affects memorable experiences (Moscardo 1996).

4 Discussion and conclusions

This systematic review and bibliometric analysis provides an overview of the empirical evidence in the literature for the connections between mindfulness theories and tourism. Supporting the findings of previous studies suggesting that mindfulness is effective in creating positive travel experiences (Iacob et al. 2021), the promising results of this update are intended to offer a comprehensive and objective review of the literature contributing to the better knowledge of researchers interested in this field.

The papers selected for analysis differed regarding sample characteristics, theories, instruments, and research methods and techniques. Given the heterogeneity between studies, only general statements can be made concerning the relationship between mindfulness and its application with tourists. The now larger body of evidence suggests potential trends for research themes, and has implications for future studies considering these hotspots.

Some authors have recently expressed a growing interest in exploring the benefits of mindfulness theories in tourism. Only a small and restricted group of researchers was interested when it was a new research domain (2004–2012). The first empirical study conducted by Frauman and Norman (2004) served as a beginning and inspiration for subsequent studies in this field. For example, these authors were the first to adapt the scale developed by Moscardo (1996) and after, different researchers (Choe et al. 2014; Noor et al. 2014; Rubin et al. 2016; Taylor and Norman 2018; Ying et al. 2020) used the adaptation from Frauman and Norman (2004). Then, the number of interested authors increased, new conditions were explored, and finally, the growth of publications entered a strengthening phase (2019–2021). Publications on this subject are scattered across different highly-ranked tourism journals, indicating the excellent quality of the studies.

A careful analysis of the geographic map reveals a growing interest in applying mindfulness theories in Occident, with the USA as the top country in published papers. Although the studies are dispersed, it was interesting to note a higher concentration in the Asian region. This trend could be because the culture of these countries involves considerable interest in the Buddhist tradition. Another curious finding was that SCM was the most commonly applied theory in the Occident, and MM was more often used in the Orient, suggesting that the applied mindfulness theories are connected to the countries where the studies were developed. This could be a compelling starting point for researchers to

consider developing future studies in Occident. For instance, given the lack of studies conducted in Europe, it would be of added value to direct more research to this region, and thus try to understand if there are cultural differences between tourists who adopt mindfulness states while travelling.

Some studies did not have the mindfulness concept as the main variable under investigation, and neither presented a theoretical mindfulness model. However, most studies included mindfulness as a primary variable under analysis and used SCM theory. Essentially these studies were based on the seminal work of Moscardo (1996) that introduced the concept of mindfulness in tourism. Also, they applied the mindfulness measure originally developed by Moscardo (1996), which inspired other researchers to adapt the scale to different tourism contexts. On the other hand, the MM theory was less used. The authors who relied on MM theory applied the scales that directly assess the mindfulness concept, such as the FMI, FFMQ, MAAS and TMS. For instance, MM theory has been given limited research attention in tourism settings (Chen et al. 2017). Future studies might therefore consider developing further research using MM rather than SCM theories. Although only empirical studies were included in the review, conceptual studies with robust theoretical frameworks are crucial to providing guidelines for future studies.

Patterns of connections in the data were examined through co-occurrence analysis using VOSviewer, which allowed us to identify and organise the current trends in the literature and indicate potential directions. Surprisingly, some of the studies were quite different. Given this heterogeneity, the main themes were identified and grouped into six categories: tourist experience, nature-oriented activities, sustainability and pro-environmental behaviour, tourist satisfaction, destination loyalty and memorable experiences. Mindfulness theories applied to tourism have demonstrated their effectiveness in increasing positive tourist experiences (Tan et al. 2019), leading to increased levels of satisfaction (Prentice et al. 2021), which in turn influence the emotions of tourists, and thus affect destination loyalty (Sie et al. 2021). A positive relationship was also found with memories, indicating that the more motivated and mindful tourists are, the more they will remember (Ying et al. 2020). According to the literature, cognitive psychological theory can help various tourism research subjects. For instance, when analysing tourist experiences, cognitive theory may help identify the memorable components and mechanisms (Skavronskaya et al. 2017). Another exciting concept studied by some authors was the relationship between mindfulness and the eco-friendly behaviour of tourists. It was found that high levels of mindfulness could raise a tourist's awareness of sustainability and pro-environmental behaviours, affecting the beneficial mental effects of contact with nature. The number of published studies in this field is still limited, and there is a need to develop further studies and explore new concepts.

We acknowledge that although all the principles of a systematic literature review (SLR) with bibliometric methodology have been followed, this study still has possible limitations. First, only peer-reviewed articles written in English were included, which on the one hand, supports the quality of the studies, but on the other hand, omits articles that were not peer-reviewed or were written in other languages. Databases of grey literature were not searched, and the limited access to some scientific papers may have meant that a few relevant studies were omitted.

This study discussed the current state of research in this domain, and offered understanding and guidelines for those interested in its research. Future researchers should consider these findings in order to focus on existing and future trends in the literature. Since mindfulness is an emerging field of study in tourism, many new subjects could be added to the body of knowledge.

Tourism is an interesting setting for studying the psychological concepts of behaviour and cognition (Scott 2020). Researchers have identified some mindfulness mechanisms, but have not explained the full effects on tourists, especially for outcomes such as well-being. It would thus be useful to determine how these mechanisms arise. Since there is a positive connection between mindfulness and positive psychological outcomes, future research should consider the potential of positive psychology for improving well-being. It could be a powerful tool for destination managers designing travel experiences, and an exciting concept for tourism industries wishing to increase the living standards of tourists. There is an opportunity for tourism managers to consider stressing the importance of well-being when planning tourism resources, products, and services for communication to potential visitors. Given the significance of motivational factors for travelling, such as escape, relaxation, self-fulfilment, and wish fulfilment, mindfulness could be a fascinating concept for tourism marketing managers wishing to emphasise these aspects to attract customers.

This systematic review contributes to the field by effectively visualising the available literature, presenting the evolution of research publications over a specific period, and identifying current research areas and potential future research directions. It is hoped this knowledge can assist tourism management in taking the proper actions in order to be centred holistically on individual, social, and environmental well-being in tourism practice and decision-making.

5 Research implications and future research agenda

This section presents general shortcomings identified in the literature and subsequently organised by themes, offers implications that could be useful for decision-makers and offers directions for researchers interested in this topic (Table 4).

First, just a few studies considered demographic data for analysis and discussion. For example, Frauman and Norman (2004) found that demographic characteristics affect tourists' mindfulness levels. Though, Dutt and Ninov (2015) revealed no significant difference between individuals' demographic characteristics and mindfulness levels. This incongruency raises the question: Could demographic characteristics, such as education, age, and gender, affect the tourist's mindfulness level?

Second, the studies used only self-report instruments to assess tourists' mindfulness levels. Self-reporting data can be affected by external biases, such as social desirability, when individuals may choose the more socially acceptable answer instead of being honest, and introspective ability, where individuals may not be able to evaluate themselves properly. So, how can tourism experiences and tourists' mindfulness be measured more effectively?

Third, a limitation found in all studies was that data collection occurred at only one site. Thus, the results may not be generalisable and representative of other tourism contexts. Developing longitudinal studies would enable to analyse different aspects of mindfulness in tourists in the long term and carry out a follow-up assessment. Are tourists' mindfulness levels stable over time? Or do the effects gradually weaken?

Fourth, another gap was the lack of information regarding the level of knowledge or engagement with mindfulness practice among tourists. Identifying whether tourists are familiar with, or perform regular mindfulness practice, will also help better understand its effect on tourists' outcomes. So, do tourists who know the concept of mindfulness have a greater awareness and thus are more aware of its effects?

Table 4 Implications and future research agenda

Key topics	Findings	Questions
Cluster 1: tourist experience	<p>No evidence was obtained of what factors may influence the mindfulness levels of tourists. Therefore, analysing some influencing elements, such as psychological factors and individual characteristics, would be essential. Marketers should pay attention to the factors that affect the tourists' mental state beyond just focusing on the quality of the service offered. Attending and understanding the psychological travel needs of tourists will help tourism providers to design and deliver more personalised services and products</p> <p>Digital platforms and mobile technologies could facilitate the provision of mindfulness audios and promote different destinations that aim to increase mindful tourism experiences. It would be interesting to investigate the effect of technology on mindfulness levels</p>	<p>What factors may influence the mindfulness levels of tourists? How can these factors affect tourism experiences? To what extent can personalised services affect tourists' mindfulness levels? May digital technology be an effective tool to increase mindful tourism experience?</p>
Cluster 2: nature-oriented activities	<p>Some authors suggest a relationship between mindfulness and a greater connection with nature. It is suggested that tourists may benefit from increased well-being when in contact with nature. However, they do not explain how these benefits might arise</p>	<p>How can contact with nature contribute to tourists' well-being? What factors might affect the increase in positive outcomes for tourists seeking nature-oriented activities?</p>
Cluster 3: sustainability and pro-environmental behaviour	<p>Using appropriate communication channels and presenting structured information for tourists may help managers to address the environmental, emotional, and social benefits. Tourism managers could use mindfulness measures to inform and educate tourists and protect resources through sustainability efforts. To improve pro-environmental behaviour practices, effective communication to trigger mindfulness levels of tourists would help consumers and tourism destinations benefit from sustainable behaviour</p>	<p>What information sources and programs could effectively promote tourists' eco-friendly behaviour? Would mindfulness-oriented practices be a valuable and effective tool to influence tourist pro-environmental behaviour?</p>

Table 4 (continued)

Key topics	Findings	Questions
Cluster 4: tourist satisfaction	Tourists' satisfaction and its relationship with mindfulness have been analysed in studies conducted mainly at airports. Mindful passengers are more active in searching for information about airlines, more receptive to their environment and aware of the context paying attention to details. Thus, the airlines may benefit from involving mindful passengers in improving and creating products and services	The studies suggest a relationship between mindfulness levels and customer satisfaction, but what other factors may have influenced the results?
Cluster 5: destination loyalty	Destination managers could consider different factors, such as tourists' satisfaction and motivation, to promote destinations, and include mindfulness experiences to facilitate tourists to enjoy a memorable tourism experience and thus increase destination loyalty. There may be other factors influencing loyalty that have not yet been studied and need more research attention	Is this the first time the tourists have visited the destination? If not, how often have they visited the destination? Can creative and meaningful messages about the destination encourage repeat patronage?
Cluster 6: memorable experiences	Mindfulness can promote and increase memory recall about the destinations and their experiences. As the novelty factor is a fundamental concept in SCM theory, marketers can benefit from including this aspect in the destinations' advertising campaigns. One gap identified was that the studies only considered the relationship of mindfulness with positive memorable experiences	What could be the effect of mindfulness on negative tourism memorable experiences? Do mindfulness levels contribute to decreasing negative tourism memorable experiences?

Author contributions All authors contributed to the idea of writing the article as well as establishing the objectives of the study. The literature search and data analysis were performed by Vivien Iacob. The first draft of the manuscript was written by Vivien Iacob and all authors commented on previous versions of the manuscript and critically revised the work. All authors read and approved the final manuscript.

Funding Open access funding provided by FCTIFCCN (b-on). This work was supported by the FCT—The Portuguese Foundation for Science and Technology under Grant UI/BD/152313/2021.

Declarations

Conflict of interest No potential conflict of interest was reported by the authors.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Akhshik, A., Ozturen, A., Rezapouraghdam, H.: A passionate travel to mind green turtles—unpacking the complexity of visitors' green behaviour. *Int. J. Tour. Res.* **23**(3), 301–318 (2020). <https://doi.org/10.1002/jtr.2407>
- Aliyev, F., Urkmez, T., Wagner, R.: A comprehensive look at luxury brand marketing research from 2000 to 2016: a bibliometric study and content analysis. *Manag. Rev. Quar.* **69**(3), 233–264 (2018). <https://doi.org/10.1007/s11301-018-00152-3>
- Amel, E.L., Manning, C.M., Scott, B.A.: Mindfulness and sustainable behavior: pondering attention and awareness as means for increasing green behavior. *Ecopsychology* **1**(1), 14–25 (2009). <https://doi.org/10.1089/eco.2008.0005>
- Baer, R.A.: Using self-report assessment methods to explore facets of mindfulness. *Assessment* (2006). <https://doi.org/10.1177/1073191105283504>
- Barber, N.A., Deale, C.: Tapping mindfulness to shape hotel guests' sustainable behavior. *Cornell Hosp. Q.* **55**(1), 100–114 (2013). <https://doi.org/10.1177/1938965513496315>
- Baminiwatta, A., Solangaarachchi, I.: Trends and developments in mindfulness research over 55 years: a bibliometric analysis of publications indexed in web of science. *Mindfulness* **12**, 2099–2116 (2021). <https://doi.org/10.1007/s12671-021-01681-x>
- Barbaro, N., Pickett, S.M.: Mindfully green: examining the effect of connectedness to nature on the relationship between mindfulness and engagement in pro-environmental behavior. *Pers. Individ. Differ.* **93**, 137–142 (2016). <https://doi.org/10.1016/j.paid.2015.05.026>
- Bastidas-Manzano, A.-B., Sánchez-Fernández, J., Casado-Aranda, L.-A.: The past, present, and future of smart tourism destinations: a bibliometric analysis. *J. Hosp. Tour. Res.* (2020). <https://doi.org/10.1177/1096348020967062>
- Beshai, S., Salimuddin, S., Refaie, N., Maierhoffer, J.: Dispositional mindfulness and self-compassion buffer the effects of COVID-19 stress on depression and anxiety symptoms. *Mindfulness* (2022). <https://doi.org/10.1007/s12671-022-02008-0>
- Bigné, J.E., Sanchez, M.I., Sanchez, J.: Tourism image, evaluation variables and after purchase behaviour: Inter-relationship. *Tour. Manage.* **22**(6), 607–616 (2001)
- Block, J., Fisch, C., Rehan, F.: Religion and entrepreneurship: a map of the field and a bibliometric analysis. *Manag. Rev. Q.* **70**(4), 591–627 (2019). <https://doi.org/10.1007/s11301-019-00177-2>
- Block, J.H., Fisch, C.: Eight tips and questions for your bibliographic study in business and management research. *Manag. Rev. Q.* **70**, 307–312 (2020). <https://doi.org/10.1007/s11301-020-00188-4>
- Brown, K.W., Ryan, R.M.: The benefits of being present: mindfulness and its role in psychological well-being. *J. Pers. Soc. Psychol.* **84**(4), 822–848 (2003). <https://doi.org/10.1037/0022-3514.84.4.822>

- Burns, R.A., Crisp, D.A.: Prioritising happiness has important implications for mental health, but perhaps only if you already are happy. *Appl. Res. Qual. Life* **17**, 375–390 (2021)
- Campos, A.C., Mendes, J., Valle, P.O.D., Scott, N.: Co-creation of tourist experiences: a literature review. *Curr. Issues Tour.* **21**(4), 369–400 (2018). <https://doi.org/10.1080/13683500.2015.1081158>
- Cavalcante, W.Q.D.F., Coelho, A., Bairrada, C.M.: Sustainability and tourism marketing: a bibliometric analysis of publications between 1997 and 2020 using VOSviewer software. *Sustainability* **13**(9), 4987 (2021). <https://doi.org/10.3390/su13094987>
- Cervinka, R., Schwab, M., Haluza, D.: Investigating the qualities of a recreational forest: findings from the cross-sectional hallerwald case study. *Int. J. Environ. Res. Public Health* **17**(5), 1676 (2020). <https://doi.org/10.3390/ijerph17051676>
- Chan, E.Y.: Mindfulness promotes sustainable tourism: the case of Uluru. *Curr. Issues Tour.* **22**(13), 1526–1530 (2018). <https://doi.org/10.1080/13683500.2018.1455647>
- Chen, C.C., Petrick, J.F.: Health and wellness benefits of travel experiences. *J. Travel Res.* **52**(6), 709–719 (2013). <https://doi.org/10.1177/0047287513496477>
- Chen, L.I.L., Scott, N., Benckendorff, P.: Mindful tourist experiences: a Buddhist perspective. *Ann. Tour. Res.* **64**, 1–12 (2017). <https://doi.org/10.1016/j.annals.2017.01.013>
- Chen, Y.S., Chang, C.H., Yeh, S.L.: Green shared vision and green creativity: the mediation roles of green mindfulness and green self-efficacy. *Qual. Quant.* **49**, 1169–1184 (2015). <https://doi.org/10.1007/s11135-014-0041-8>
- Choe, Y., Lee, S.M., Kim, D.K.: Understanding the exhibition attendees' evaluation of their experiences: a comparison between high versus low mindful visitors. *J. Travel Tour. Mark.* **31**(7), 899–914 (2014). <https://doi.org/10.1080/10548408.2014.890157>
- Chua, B.-L., Al-Ansi, A., Lee, M.J., Han, H.: Impact of health risk perception on avoidance of international travel in the wake of a pandemic. *Curr. Issues Tour.* **24**(7), 1–18 (2020). <https://doi.org/10.1080/13683500.2020.1829570>
- Deci, E.L., Ryan, R.M.: Conceptualizations of intrinsic motivation and self-determination. In: *Intrinsic motivation and self-determination in human behavior. Perspectives in Social Psychology*. Springer, Boston, MA. (1985). https://doi.org/10.1007/978-1-4899-2271-7_2
- Dharmesti, M., Merrilees, B., Winata, L.: "I'm mindfully green": examining the determinants of guest pro-environmental behaviors (PEB) in hotels. *J. Hosp. Mark. Manag.* **29**, 830–847 (2020). <https://doi.org/10.1080/19368623.2020.1710317>
- Dutt, C., Ninov, I.: Tourists' experiences of mindfulness in Dubai, United Arab Emirates (UAE). *J. Travel Tour. Mark.* **33**(8), 1195–1212 (2015). <https://doi.org/10.1080/10548408.2015.1107521>
- Ermann, A., Kim, J., Lee, D.C., Seo, Y., Lee, J., Kim, S.S.: Mindfulness and pro-environmental hotel preference. *Ann. Tour. Res.* **90**, 103263 (2021). <https://doi.org/10.1016/j.annals.2021.103263>
- Fisch, C., Block, J.H.: Six tips for your (systematic) literature review in business and management research. *Manag. Rev. Q.* **68**(2), 103–106 (2018)
- Frauman, E., Norman, W.C.: Mindfulness as a tool for managing visitors to tourism destinations. *J. Travel Res.* **42**(4), 381–389 (2004). <https://doi.org/10.1177/0047287504263033>
- Garbarino, E., Johnson, M.S.: The different roles of satisfaction, trust, and commitment in customer relationships. *J. Mark.* **63**(2), 70–87 (1999). <https://doi.org/10.2307/1251946>
- Garcés, S., Pocinho, M., Jesus, S.N., Rieber, M.S.: Positive psychology and tourism: a systematic literature review. *Tour Manage. Stud.* **14**(3), 41–51 (2018). <https://doi.org/10.18089/tms.2018.14304>
- Garrigos-Simon, F., Narangajavana-Kaosiri, Y., Lengua-Lengua, I.: Tourism and sustainability: a bibliometric and visualization analysis. *Sustainability* **10**(6), 1976 (2018). <https://doi.org/10.3390/su10061976>
- Gupta, S., Nath Mishra, O., Kumar, S.: Tourist participation, well-being and satisfaction: the mediating roles of service experience and tourist empowerment. *Curr. Issues Tour.* **26**, 2613–2628 (2022). <https://doi.org/10.1080/13683500.2022.2091429>
- Güzel, S., Görmüş, A.: Prediction of satisfaction indicators increasing the level of happiness: evidence from the Turkish life satisfaction survey. *Qual. Quant.* (2022). <https://doi.org/10.1007/s11135-022-01532-4>
- Haobin, B., Huiyue, Y., Peng, L., Fong, L.H.N.: The impact of hotel servicescape on customer mindfulness and brand experience: the moderating role of length of stay. *J. Hosp. Mark. Manag.* **30**(5), 592–610 (2021). <https://doi.org/10.1080/19368623.2021.1870186>
- Howarth, A., Smith, J.G., Perkins-Porras, L., Ussher, M.: Effects of brief mindfulness-based interventions on health-related outcomes: a systematic review. *Mindfulness* **10**, 1957–1968 (2019). <https://doi.org/10.1007/s12671-019-01163-1>
- Hwang, K., Lee, B.: Pride, mindfulness, public self-awareness, affective satisfaction, and customer citizenship behaviour among green restaurant customers. *Int. J. Hosp. Manag.* **83**, 169–179 (2019). <https://doi.org/10.1016/j.ijhm.2019.05.009>

- Jacob, V., de Jesus, S.N., Carmo, C.: A systematic review: mindfulness applied on the field of tourism. *J. Spat. Organ. Dyn.* **9**(4), 261–275 (2021)
- Jacob, J., Jovic, E., Brinkerhoff, M.B.: Personal and planetary well-being: mindfulness meditation, proenvironmental behavior and personal quality of life in a survey from the social justice and ecological sustainability movement. *Soc. Indic. Res.* **93**, 275–294 (2009). <https://doi.org/10.1007/s11205-008-9308-6>
- Jirojkul, S., Pongsakornrungsilp, S., Pianroj, N., Chaiyakot, P., Mia, S., Masst, T., Techato, K.: The effect of mindset on tourist behaviour and mindful consumption in a community enterprise in Krabi, Thailand. *TEM J.* (2021). <https://doi.org/10.18421/tem103-11>
- Kabat-Zinn, J.: An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: theoretical considerations and preliminary results. *Gen. Hosp. Psychiat.* **4**(1), 33–47 (1982). [https://doi.org/10.1016/0163-8343\(82\)90026-3](https://doi.org/10.1016/0163-8343(82)90026-3)
- Kabat-Zinn, J.: Meditation is Everywhere. *Mindfulness* **5**(4), 462–463 (2014). <https://doi.org/10.1007/s12671-014-0323-1>
- Kabat-Zinn, J.: *Wherever You go, There You are: Mindfulness Meditation in Everyday Life*. Hyperion, New York (1994)
- Kabat-Zinn, J.: *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Delta Trade Paperback, Bantam Dell (2005)
- Kang, M., Gretzel, U.: Effects of podcast tours on tourist experiences in a national park. *Tour. Manage.* **33**(2), 440–455 (2012). <https://doi.org/10.1016/j.tourman.2011.05.005>
- Kim, J.H.: The impact of memorable tourism experiences on loyalty behaviors: the mediating effects of destination image and satisfaction. *J. Travel Res.* **57**(7), 856–870 (2017). <https://doi.org/10.1177/0047287517721369>
- Kirby, A.: Exploratory bibliometrics: Using VOSviewer as a preliminary research tool. *Publications* **11**(1), 10 (2023). <https://doi.org/10.3390/publications11010010>
- Korpela, K., Savonen, E.M., Anttila, S., Pasanen, T., Ratcli, E.: Enhancing well-being with psychological tasks along forest trails. *Urban For. Urban Green.* **26**, 25–30 (2017)
- Kriakous, S.A., Elliott, K.A., Lamers, C., Owen, R.: The effectiveness of mindfulness-based stress reduction on the psychological functioning of healthcare professionals: a systematic review. *Mindfulness* **12**(1), 1–28 (2020). <https://doi.org/10.1007/s12671-020-01500-9>
- Langer, E. J.: *Mindfulness*. Addison-Wesley Pub. Co, Reading (1989)
- Langer, E. J.: *The Power of Mindful Learning*. Da Capo Press (2016)
- Lau, M.A., Bishop, S.R., Segal, Z.V., Buis, T., Anderson, N.D., Carlson, L., Devins, G.: The Toronto mindfulness scale: development and validation. *J. Clin. Psychol.* **62**(12), 1445–1467 (2006)
- Lee, Y., Kim, I.: Investigating key innovation capabilities fostering visitors' mindfulness and its consequences in the food exposition environment. *J. Travel Tour. Mark.* **35**(6), 803–818 (2018). <https://doi.org/10.1080/10548408.2017.1421496>
- Loureiro, S.M.C., Breazeale, M., Radic, A.: Happiness with rural experience: exploring the role of tourist mindfulness as a moderator. *J. Vacat. Mark.* **25**(3), 279–300 (2019a). <https://doi.org/10.1177/1356766719849975>
- Loureiro, S.M.C., Fialho, A.F.: The role of intrinsic in-flight cues in relationship quality and behavioural intentions: segmentation in less mindful and mindful passengers. *J. Travel Tour. Mark.* **34**(7), 948–962 (2016). <https://doi.org/10.1080/10548408.2016.1251871>
- Loureiro, S.M.C., Stylos, N., Miranda, F.J.: Exploring how mindfulness may enhance perceived value of travel experience. *Serv. Indus. J.* **40**, 800–824 (2019). <https://doi.org/10.1080/02642069.2019.1600672>
- Melis, M., Schroyen, G., Pollefeyt, J., Raes, F., Smeets, A., Sunaert, S., Deprez, S., Van der Gucht, K.: The impact of mindfulness-based interventions on brain functional connectivity: a systematic review. *Mindfulness* (2022). <https://doi.org/10.1007/s12671-022-01919-2>
- Moscardo, G., Woods, B., Saltzer, R.: *The Role of Interpretation in Wildlife Tourism*. Common Ground Publishing, Melbourne (2004)
- Moscardo, G.: Mindful visitors: heritage and tourism. *Ann. Tour. Res.* **23**(2), 376–397 (1996). [https://doi.org/10.1016/0160-7383\(95\)00068-2](https://doi.org/10.1016/0160-7383(95)00068-2)
- Moral-Muñoz, J.A., Herrera-Viedma, E., Santisteban-Espejo, A., Cobo, M.J.: Software tools for conducting bibliometric analysis in science: an up-to-date review. *Prof. Inform.* (2020). <https://doi.org/10.3145/epi.2020.ene.03>
- Moral-Munoz, J. A., López-Herrera, A. G., Herrera-Viedma, E., Cobo, M. J. Science mapping analysis software tools: a review. In: *Springer Handbook of Science and Technology Indicators*, pp. 159–185 (2019). https://doi.org/10.1007/978-3-030-02511-3_7
- Ngo, L.V., Northey, G., Duffy, S., Thao, H.T.P.: Perceptions of others, mindfulness, and brand experience in retail service setting. *J. Retail. Consumer Serv.* **33**, 43–52 (2016). <https://doi.org/10.1016/j.jretconser.2016.07.003>

- Noor, S.M., Rasoolimanesh, S.M., Jaafar, M., Ganesan, V.: What influences visitor mindfulness at world heritage sites? *Tour. Cult. Commun.* **14**(3), 139–150 (2014). <https://doi.org/10.3727/109830415x14213698267271>
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., McGuinness, L.A.: The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ Brit. Med. J.* **372**(71) (2021). <https://doi.org/10.1136/bmj.n71>
- Pirgie, L., Schwab, M., Sudkamp, J., Hölzge, J., Cervinka, R.: Recreation in the national park: visiting restorative places in the National Park Thayatal, Austria fosters connectedness and mindfulness. *Umweltpsychologie*. **39**, 59–74 (2016)
- Pirson, M., Langer, E.J., Bodner, T., Zilcha-Mano, S.: The development and validation of the langer mindfulness scale: enabling a socio-cognitive perspective of mindfulness in organisational contexts. *Fordham Univ Sch Bus Res Pap* (2012). <https://doi.org/10.2139/ssrn.2158921>
- Prentice, C., Hsiao, A., Wang, X., Loureiro, S.M.C.: Mind, service quality, relationship with airlines. *J. Strat. Marke.* **31**, 212–234 (2021). <https://doi.org/10.1080/0965254x.2021.1894216>
- Rau, H.K., Williams, P.G.: Dispositional mindfulness: a critical review of construct validation research. *Pers. Individ. Differ.* **93**, 32–43 (2016). <https://doi.org/10.1016/j.paid.2015.09.035>
- Rubin, S., Lee, W., Paris, C.M., Teye, V.: The influence of mindfulness on tourists' emotions, satisfaction and destination loyalty in Fiji. *Trav. Tour. Res.* **54**, 2–9 (2016)
- Scheepers, R.A., Emke, H., Epstein, R.M., Lombarts, K.M.J.M.H.: The impact of mindfulness-based interventions on doctors' well-being and performance: a systematic review. *Med. Educ.* **54**(2), 138–149 (2019). <https://doi.org/10.1111/medu.14020>
- Scott, N., Campos, A.C.: Cognitive science of tourism experiences. In: Augusto Costa, R., Brandão, F., Breda, Z., Costa, C. (Eds.) *Planning and Managing the Experience Economy in Tourism*, pp. 1–21. IGI Global (2022). <https://doi.org/10.4018/978-1-7998-8775-1.ch001>
- Scott, N.: Cognitive psychology and tourism—surfing the “cognitive wave”: a perspective article. *Tour. Rev.* **75**(1), 49–51 (2020). <https://doi.org/10.1108/tr-06-2019-0217>
- Segal, Z.V., Teasdale, J.D., Williams, J.M., Gemar, M.C.: The mindfulness-based cognitive therapy adherence scale: inter-rater reliability, adherence to protocol and treatment distinctiveness. *Clin. Psychol. Psychot.* **9**(2), 131–138 (2002). <https://doi.org/10.1002/cpp.320>
- Seligman, M.E., Steen, T.A., Park, N., Peterson, C.: Positive psychology progress: empirical validation of interventions. *Am. Psychol.* **60**, 410–421 (2005). <https://doi.org/10.1037/0003-066X.60.5.410>
- Seok, H., Barnett, G.A., Nam, Y.: A social network analysis of international tourism flow. *Qual. Quant.* **55**, 419–439 (2021). <https://doi.org/10.1007/s11355-020-01011-8>
- Sie, D.L., Pegg, D.S., Virginia-Phelan, D.K.: Senior tourists' self-determined motivations, tour preferences, memorable experiences and subjective well-being: an integrative hierarchical model. *J. Hosp. Tour. Manage.* **47**, 237–251 (2021). <https://doi.org/10.1016/j.jhtm.2021.03.006>
- Skavronskaya, L., Scott, N., Moyle, B., Le, D., Hadinejad, A., Zhang, R., Gardiner, S., Coghlan, A., Sha-keela, A.: Cognitive psychology and tourism research: state of the art. *Tour. Rev.* **72**(2), 221–237 (2017). <https://doi.org/10.1108/tr-03-2017-0041>
- Tan, P.L., Md Noor, S., Rasoolimanesh, S.M., Mustafa, H.: Communication and visitor factors contributing towards heritage visitors' mindfulness. *J. Herit. Tour.* **15**, 27–43 (2019). <https://doi.org/10.1080/1743873x.2019.1586909>
- Taylor, D.C., Barber, N.A., Deale, C.: Guests repeat patronage of pro-environmental hotels. *J. Hosp. Tour. Manage.* **33**, 62–72 (2017). <https://doi.org/10.1016/j.jhtm.2017.09.002>
- Taylor, H., Strauss, C., Cavanagh, K.: Can a little bit of mindfulness do you good? A systematic review and meta-analyses of unguided mindfulness-based self-help interventions. *Clin. Psychol. Rev.* **89**, 102078 (2021). <https://doi.org/10.1016/j.cpr.2021.102078>
- Taylor, L.L., Norman, W.C.: The influence of mindfulness during the travel anticipation phase. *Tour. Recr. Res.* **44**(1), 76–90 (2018). <https://doi.org/10.1080/02508281.2018.1513627>
- Toniolo-Barrios, M., Brasil, A., Pitt, L.F.: Nine prolific years: an analysis of publications in mindfulness. *Mindfulness* **11**(5), 1077–1089 (2020). <https://doi.org/10.1007/s12671-020-01321-w>
- van Eck, N.J., Waltman, L., Dekker, R., van den Berg, J.: A comparison of two techniques for bibliometric mapping: multidimensional scaling and VOS. *J. Am. Soc. Inf. Sci. Technol.* **61**(12), 2405–2416 (2010). <https://doi.org/10.1002/asi.21421>
- van Eck, N. J., Waltman, L.: Visualising bibliometric networks. In: *Measuring Scholarly of Impact*, pp. 285–320 (2014a). https://doi.org/10.1007/978-3-319-10377-8_13
- van Eck, N.J., Waltman, L.: Visualizing bibliometric networks. In: Ding, Y., Rousseau, R., Wolfram, D. (eds.) *Measuring Scholarly Impact: Methods and Practice*, pp. 285–320. Springer, Berlin (2014)

- Walach, H., Buchheld, N., Buttenmuller, V., Kleinknecht, N., Schmidt, S.: Measuring mindfulness—the freiburg mindfulness inventory (FMI). *Pers. Individ. Differ.* **40**, 1543–1555 (2006)
- Waltman, L., van Eck, N.J.: A smart local moving algorithm for large-scale modularity-based community detection. *Eur. Phys. J. B.* **86**, 471 (2013). <https://doi.org/10.1140/epjb/e2013-40829-0>
- Wang, E., Kang, N.: Does life satisfaction matter for pro-environmental behavior? Empirical evidence from China General Social Survey. *Qual. Quant.* **53**, 449–469 (2019). <https://doi.org/10.1007/s11135-018-0763-0>
- Xu, T., Liu, H.: Reversing the question: does subjective well-being affect family tourism expenditure? *Curr. Issues Tour.* **26**, 2812–2828 (2022). <https://doi.org/10.1080/13683500.2022.2100746>
- Ying, T., Tan, X., Ye, S., Ka, X., Zhou, Y.: Examining tourist mindfulness in museums: the roles of familiarity and motivation. *Asia Pac. J. Tour. Res.* **25**(9), 981–996 (2020). <https://doi.org/10.1080/10941665.2020.1819835>
- Zenner, C., Herrnleben-Kurz, S., Walach, H.: Mindfulness-based interventions in schools—a systematic review and meta-analysis. *Front. Psychol.* (2014). <https://doi.org/10.3389/fpsyg.2014.00603>
- Zhang, J., Bloemer, J.M.: The impact of value congruence on consumer-service brand relationships. *J. Serv. Res.* **11**(2), 161–178 (2008)

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.