A bibliometric review of research on COVID-19 and tourism: Reflections for moving forward

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ABSTRACT

By adopting a bibliometric analysis approach, this study systematically reviews and retrospectively analyses the rapidly emerging literature on COVID-19 in tourism and hospitality. A co-word analysis revealed the intellectual structure of 177 papers (published until January 2021) consisting of four major themes discussing the following various issues: 1) the impact of COVID-19 on tourist decision-making, destination marketing, technology adoption, and tourists' well-being; 2) the future of tourism post COVID-19; 3) managing change in tourism; and 4) the COVID-19's impacts on tourism and hospitality stakeholders. The findings show that preliminary publications tend to be descriptive, pre-mature and theoretical, i.e. most studies advocate and re-imagine a more sustainable, responsible and equitable post-pandemic tourism, but almost no research investigates in-depth whether, why and how such theoretical proclamations are being materialized or not and/or whether they will remain a COVID-19 induced fuss. The paper concludes by offering various directions and propositions for future research.

1. Introduction

Since the World Health Organization (WHO) declared the COVID-19 outbreak as a global emergency on January 30, 2020 (WHO, 2020a), more than 216.8 million COVID-19 cases have been reported until the 31st August 2021, along with an unfortunate 4.5 million deaths worldwide (WHO, 2020b). The pandemic impacts all spheres of life on an individual, social and global levels (Carlsson-Szlezak, Reeves, & Swartz, 2020) with numerous repercussions and ripple effects on many industries and stakeholders. By halting travel, tourism and leisure activities, the tourism and hospitality sectors are not an exception from the COVID-19 effects. Studies reporting the impact of the pandemic on the financial, physical, psychological, social and emotional well-being of the various stakeholders from both the demand and supply side of the wider tourism industry have started and continue to emerge (Baum & Hai, 2020; Dube, Godwell, & David, 2020; Gössling, Daniel, & Hal, 2020; Gretzel et al., 2020; Hall, Scott, & Gössling, 2020; ILO, 2021). As we move toward a phased unlocking and restart of tourism and hospitality, academics, governments, and tourism firms alike should adopt a retrospective approach in order to reflect and learn how to build back better while also strengthen their resilient capabilities to survive in this highly

turbulent world (Gretzel et al., 2020).

The COVID-19 implications on tourism as a social phenomenon and industry practice have fueled research in the tourism literature. Scholars have been inspired and productive in writing and publishing numerous studies (Sigala, 2020) initially, in the form of viewpoints and commentaries, but later and increasingly nowadays as research studies with empirical data. Journals have also developed special issues and/or welcoming any form of academic papers addressing the critical and emerging issues in tourism due to the pandemic. Tourism scholars have also adopted various, divergent, multi-disciplinary theoretical lenses and methodological approaches to investigate the multi-facet nature of COVID-19 and its perplex implications on the tourism research and industry. As this literature stream evolves and it will continue to attract research attention and contributions, it is timely and important to understand the intellectual structure of the research already conducted within the field of COVID-19, tourism and hospitality. By adopting a retrospective approach, bibliometric literature reviews are very instrumental and valuable in guiding and advancing future research (Sigala, Kumar, Donthu, Sureka, & Joshi, 2021). In a similar vein, we also aim to develop a knowledge map of existing research within the COVID-19 and tourism area, so that: we can better understand and identify existing

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knowledge and gaps; and, we can also critically reflect on what and how to continue researching so that we can contribute to better tourism future. Some scholars have already conducted and published some review studies on COVID-19 related research in various scientific fields, including business and social sciences (Aristovnik, Ravšelj, & Umek, 2020; Chahrour et al., 2020; El Mohadab, Bouikhalene, & Safi, 2020; Hossain, 2020; Verma & Gustafsson, 2020). However, no systematic review study has been published so far about COVID-19 related research within tourism and hospitality, despite the rapidly emerging literature within this field. One study reviewing COVID-19 related research in tourism (Sharma, Thomas, & Paul, 2021) focused on systematically reviewing research solely related to resilience and COVID-19 in tourism with the purpose to develop a framework on how to rejuvenate the tourism industry in the post COVID-19 era. Another study (Zopiatis, Pericleous, & Theofanous, 2021) conducted an integrative review of COVID-19 and tourism and hospitality domain. Although both these papers are valuable within their own focused field, they do not consider and critically reflect on the wider literature and issues related to COVID-19 and tourism, as well as they do not provide a critical assessment of existing findings and future research agendas.

To fill in this gap and urgency, this study adopts a bibliometric approach in order to review research published so far in the field of COVID-19, tourism and hospitality. By being reflective and critical, the study identifies what and why we know about COVID-19 and tourism, what we do not know and why and what we should know by identifying and proposing priorities and propositions for future research agendas. Overall, the paper calls and advocates for a research perspective that moves beyond the short-term COVID-19 reality check effects, and identifies avenues and research methodologies for conducting research with real-world impact that can transform the tourism and hospitality industry, its stakeholders and their social and business practices (Brouder, 2020; Sigala, 2020). Hence, the paper also contributes to discussions on how to develop transformative tourism research, which is currently needed more than ever (Gretzel et al., 2020; Sigala, 2020).

To identify published research, the study applied a keyword search on the Web of Science (WoS) database, which resulted in 177 related papers published until January 7, 2021. The thematic structure of these 177 papers was then analyzed by performing co-word analyses. By revealing and discussing the major themes and sub-themes of past COVID-19 related tourism research, we contribute to the literature by mapping the existing knowledge and gaps and by offering various theoretical and practical implications for moving forward. Specifically, the paper concludes by discussing the emerging research (sub)-themes and offering suggestions that help tourism scholars and industry alike to: further develop and refine their research agendas and practices; conduct original and transformative research that can contribute to (re)-build back better by aiming to make tourism a more sustainable, responsible, and meaningful activity; and identify areas for developing (research) collaborations between academia and industry.

The paper is structured as follows. The first section discusses the bibliometric approach and its current application in COVID-19 related research. Then, the paper explains the research methodology and design that were adopted by this study. The paper continues by presenting the research findings revealing the knowledge structure (themes and sub-themes) of COVID-19 tourism research. The research implications of these (sub)-themes are discussed by developing various future research propositions. Finally, the paper concludes by discussing the limitations of the study and its implications on future directions.

2. Methodology

This study utilizes bibliometric methods to analyze the existing literature related to COVID-19, tourism and hospitality. Bibliometric analysis uses basic to advanced mathematical and statistical techniques to systematically review and assess the scientific contribution and impact of publications in a research field (Rodriguez-López, Alcántara-Pilar, Del Barrio-García, & Muñoz-Leiva, 2020). Bibliometric analysis requires retrieving documents from different bibliographical databases, such as Web of Science (WoS), Scopus, and Google Scholar. Subsequently, identified documents are analyzed through various bibliometric techniques and graphical representations for understanding the evolution of the intellectual and conceptual structure of a particular domain such as co-citation, co-word, and co-authorship analysis (Benckendorff & Zehrer, 2013; Koseoglu, Rahimi, Okumus, & Liu, 2016). Bibliometric metrics such as citation counts per paper, author and/or institution country are also used to measure the research influence of published literature (Donthu, Kumar, Ranaweera, Sigala, & Sureka, 2021; Sigala et al., 2021). In tourism and hospitality, bibliometric review studies (Ritchie & Jiang, 2019; Sigala et al., 2021; Yang, Khoo-Lattimore, & Arcodia, 2017; Zopiatis et al., 2021) have used similar metrics (e.g. paper outputs and co-citation metrics) for identifying and measuring the contribution and influence of specific authors, journals and/or institutions on a specific field of research. In our study, we aimed to understand what and how we know until about COVID-19 and tourism. Hence, we adopted a co-word analysis of keywords that is heavily used by bibliometric review studies (e.g. Donthu et al., 2021; Sigala et al., 2021) aiming to understand the knowledge structure of a research field and to propel future research agendas.

In this study, publications were retrieved using the WoS database, which is a comprehensive database of articles and includes detailed bibliographic information. WoS is a leading database with 171 million records, more than 34,000 journals indexed, 1.89 billion cited references, and more than 119 years of backfiles (Clarivate.com, 2021). Hence, WoS is frequently used for conducting bibliometric analysis in various domains including tourism and hospitality (Koseoglu et al., 2016; Rodriguez-López et al., 2020).

Fig. 1 depicts the research design of the study. The WoS search included the following keywords: "COVID-19" OR "Coronavirus Disease 2019" OR "Novel Coronavirus" OR "2019-nCoV" OR "2019 Novel Coronavirus" AND "Touris* OR Travel* OR "Hospitality" OR "Hotel". Similar keywords related to COVID-19 have been used in previous literature (Sharma et al., 2021; Verma & Gustafsson, 2020). The literature was further limited to articles published between January 2020 and January 7, 2021 in the hospitality, tourism, sports, leisure, and business management domains, as per WoS categories in the SCI-EXPANDED, SSCI, A&HCI, and ESCI indexes. The search was "TS search", which implies that the title, abstract, and keywords are searched for the query to return relevant articles. The search revealed 203 articles published in tourism, hospitality, and business management journals after applying the inclusion criteria of tourism, hospitality, and business domains. Further, each article was manually checked for its relevance toward the study; 26 articles were removed to avoid duplication, and finally, a total of 177 articles was used for the bibliometric analysis.

A co-word analysis of keywords appearing in the title, abstract, and author-provided keywords was conducted by using VOS viewer (Visualizing Scientific Landscapes, 2018) in order to identify the interlinkages between the keywords and so, understand the key research areas of the published articles. The co-word analysis is based on the premise that the co-occurrence of keywords describes the content of the article (Callon, Courtial, & Laville, 1991). In addition, the co-occurrence of keywords in a particular set of articles reflects the interlinkage between keywords (Van Eck & Waltman, 2010; Verma & Gustafsson, 2020). Consequently, keywords occurring together most frequently are clustered into groups (research themes) and a network map showing the interlinkages between the research themes is generated.

To conduct the co-word analysis, the bibliographic information was downloaded in a text file from WoS, which was then used as input of a co-word analysis in VOS viewer. Keywords that appeared frequently in the title, abstract and author-provided keywords were selected for further analysis. To eliminate keyword inconsistency (e.g., singular vs. plural keywords, UK vs. US English spelling), a thesaurus file was
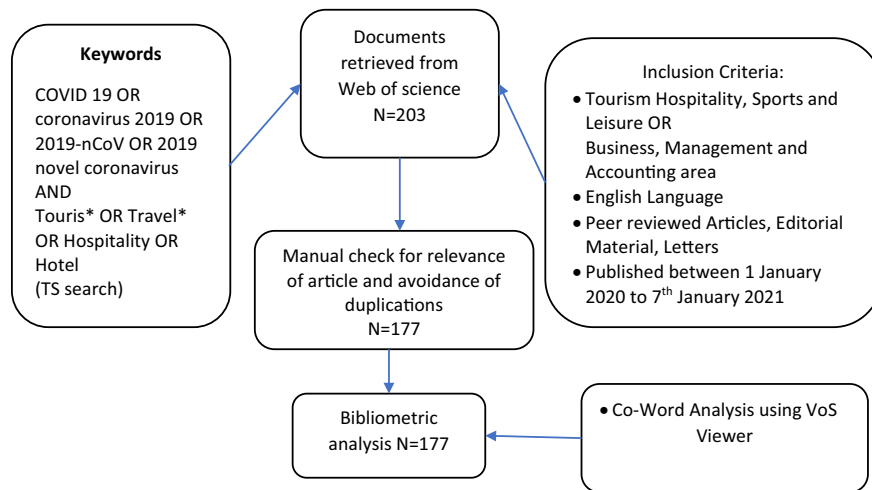
Fig. 1. Research design of the study.

supplied to VOS viewer during analysis, which ensured keyword consistency. In the final analysis, a co-word network was generated by including keywords that occur at least three times in the set of articles; 10 clusters were formed based on this analysis, which were further classified into four major themes.

3. Analysis and discussion of the findings

Within one year (from January 2020 to January 2021), a total of 177 articles were found to be published in journals listed in WoS, which indicates the rapid response of scholars and journals alike to debate the impact of the pandemic on tourism and hospitality. As the papers address many and diversified topics, the bibliometric analysis was very useful in providing a better insight of the intellectual structure of the research issues being raised, accelerated and/or fueled by COVID-19 within the tourism and hospitality literature.

3.1. Intellectual structure of COVID-19 research: (sub)-themes of research papers

A co-word analysis was conducted for identifying the intellectual structure of the 177 articles related to COVID-19, tourism and hospitality. Table 1 provides the results of this analysis by presenting the themes, the sub-themes, and the keywords associated with each sub-theme, as they are discussed by these 177 papers. Figs. 2 and 3 also depict the visualization (VOS viewer) of the intellectual structure (themes and their inter-relations) of this literature. The analysis provides a framework for analyzing the existing literature as well as identifying future research directions. Overall, the findings demonstrate: 1) the diversity and the plurality of tourism and hospitality research that was triggered and fueled by COVID-19; and 2) the perplex nature of the COVID-19 repercussions on tourism and so, their huge potential to further encourage and enlight more and in-depth future research investigations.

The findings revealed that issues discussed by the 177 papers are clustered into four major themes, each one with some distinctive sub-themes discussing a variety of keywords. The following section presents and discusses these findings.

3.1.1. Impact of COVID-19 on tourist decision-making, destination marketing, and technology adoption

To no surprise, a great majority of papers focus on the issues pertaining to the immediate impacts of COVID-19, i.e. the halt of tourism and travel activities and their impact on tourists' well-being. Numerous papers also reflect on the deeper and longer-term impacts of the COVID-19 'experiences' and operating reality (e.g. social distancing, health risks and perceptions) on the tourists' decision-making and behavior. Many papers extend their discussions by also reflecting on the subsequent consequences of the 'new' tourists' behaviors in terms of how tourism destinations and organizations should respond specifically in terms of: 1) re-developing and re-position their offerings (Bae & Chang, 2021; Jarratt, 2020; Sánchez-Cañizares, Cabeza-Ramírez, Muñoz-Fernández, & Fuentes-García, 2020; Stankov, Filimonau, & Vujičić, 2020) and, 2) using technologies for digitizing operations and offerings to provide and monitor a safe environment of touchless/contactless tourism experiences (Christou, Simillidou, & Stylianou, 2020; Lau, 2020, Oliveira, Maia, Fonseca, & Moraes, 2021). Researchers have also indicated the critical role that technology can play in helping tourism organizations to provide a safe service environment, e.g. touchless service encounters, digital health passports and mobility/contact tracing (Gretzel et al., 2020). The prolonged prevalence of COVID-19 measures and 'new behaviors' (e.g. physical distancing, avoidance of crowded places, events and/or group tours, taking precautionary measures while traveling) have also already impacted how tourists choose destinations in the near future (BBC, 2021).

3.1.1.1. Travel decision-making and the role of technology.
The decision to travel is influenced by various internal and external motivations and constraints (Jafari, Saydam, Erkanlı, & Olorunsola, 2020). Tourists have been traumatized and/or found themselves in perplexing situations as their trips were canceled suddenly or as they were stuck in a lockdown in a different country or city. Surely, these incidents have hugely impacted travel-related decision-making (Sigala, 2020). Preliminary studies report some of these temporary changes, which many of them are here to stay. Tourists are likely to travel by private transportation and with their families as well as choose destinations with reliable safety systems (Ivanova, Ivanov, & Ivanov, 2020). As COVID-19 enhances travel fears and risks, most of the studies focus on the impact of the former on tourists' behavior (Bae & Chang, 2021; Neuburger & Egger, 2020; Peluso & Pichierri, 2020). For instance, travelers may find it risky to travel on a cruise, for an event, or to other 'overcrowded' places/destinations. Similarly, the 'negative' media coverage and presentation of destinations during a pandemic (i.e. number of cases, deaths at places) may enhance risk and impact the tourists' intention to visit a destination (Neuburger & Egger, 2020). Indeed, the ability to address and manage the COVID-19 crisis does determine the tourists' risk perceptions of a destination, which in turn also influences tourists' decisions and responses to promotional messages (Cai & Leung, 2020).

As COVID-19 would not be the last health crisis, understanding and

Table 1
Themes, sub-themes, and keywords related to tourism and hospitality COVID-19 research.

Cluster	Major theme	Sub-themes	Keywords
1	Impact of COVID-19 on tourist decision making, destination marketing, and technology adoption	Travel decision making and role of technology	Adventure tourism, destination choice, ecotourism, health, forecasting, human rights, impact, risk aversion, risk perception, perceived risk, sustainable development, travel decision making, wildlife human-robot interaction, technology, artificial intelligence, big data, service robot
		Destination Marketing	Airlines, business tourism, consumer behavior, demand, destination marketing, global tourism, public health, racial discrimination, tourism experiences, travel intention
		Impact of COVID-19 on mobility and tourists' well-being	Anxiety, cruise tourism, degrowth, destination, lockdown, mobility, power relation, well-being, mental well-being
2	Future of tourism post-COVID-19: Crisis, Recovery, and Future	Future of tourism post COVID-19	Future, future trends, coping strategies, critical tourism, inclusive tourism, leisure, physical distancing, post COVID tourism, reset, social equity, social tourism, tourism education
		Sustainable Tourism and Sustainable consumption	Globalization, health and safety, inequality, labor relations, sustainable consumption, Travel, sustainable tourism, responsible tourism
		Crisis management and Recovery	Content analysis, crisis management, disaster management, media coverage, recovery marketing, tourism crisis, tourism recovery strategies
3	Managing change in the tourism industry: Change, resilience, and transformation	Change Management	Accommodation type, change management, community, competitiveness, management, regenerative economy, research paradigm, tourism development, tourism impact, transformational tourism, willingness to pay
		Resilience and transformation	Carbon footprint, climate change, critical tourism studies, destination management, geopolitics, resilience, sport, tourism demand, transformation, travel

Table 1 (*continued*)

Cluster	Major theme	Sub-themes	Keywords
			restrictions, value generation
4	Impact of COVID-19 on the tourism and hospitality stakeholders	Effect of COVID-19 on the relationship between tourism organizations and employees	Corporate social responsibility, health belief model, hope, international tourism, organizational resilience, perceived job security, satisfaction with corporation, self-efficacy, theory of planned behavior,
		Impact of COVID-19 on vulnerable groups in the hotel and tourism industry	Health crisis, hotel industry, informal economy, information technology, public policy, restaurant service, tax evasion, tourism industry, vulnerable groups

managing tourist behavior and risk perceptions will continue to be an important challenge in the post COVID-19 period (Karl, Muskat, & Ritchie, 2020; Neuburger & Egger, 2020; Sánchez-Cañizares et al., 2020). For example, recent publications (Gursoy, Can, Williams, & Ekinci, 2021; Ram, Collins-Kreiner, Gozansky, Moscona, & Okon-Singer, 2021) have already started investigating the impact of vaccination on safety and risks perceptions in order to predict and understand tourism demand and behavior in the post COVID-19 period. Moreover, although the literature has examined the adverse effect of risk on travel behavior, there is limited research exploring any 'positive' change in tourists' behavior due to the pandemic, such as choosing offbeat destinations, following social norms and favoring new types of tourism (e.g. slow tourism, virtual tourism, "untact" (Contact less) tourism) as they may be perceived as 'less risky' (Jarratt, 2020; Sánchez-Cañizares et al., 2020; Stankov et al., 2020). Further, it is also worth investigating the effect of other marketing activities (such as low pricing, discounts, advertising) on travel decision making (Mohanty, Hassan, & Ekis, 2020; Shin & Kang, 2020). Overall, it seems that future research can advance tourism knowledge by expanding and updating theories and methodologies used for predicting and understanding tourists' behavior and demand by testing and measuring the impact of new variables (e.g. vaccination certificates, health legislation, policies and adoptions in host destinations).

Technologies are suggested as a solution to address the tourists' risk perceptions and decision making (e.g. robots, traffic monitoring, and scanners enable touchless interactions/services and help monitor human mobility) (Yung & Khoo-Lattimore, 2019; Zeng, Chen, & Lew, 2020). Augmented reality is also proposed (Mohanty et al., 2020) as a solution for creating a safe environment in the post-COVID-19 era as well as for providing unique experiences to those who cannot or are not willing to visit destinations. Others (Jarratt, 2020) also claimed that webcam or cloud travel (heavily experienced during the lockdown) may enhance visitation intentions in the near future. However, past review studies (Ivanov, Gretzel, Berezina, Sigala, & Webster, 2019) have identified a lack of research on how emerging technology like robots can be integrated with business operations and servicescape. Research is also required to better understand the tradeoffs of technology impacts (e.g. virtual tourism can substitute visitation and be detrimental in jobs/income generation at the destination, but it can also contribute to environmental responsibility, Beck, Rainoldi, & Egger, 2019). Moreover, studies have focused on investigating technology applications in tourism and they have failed to explore the impact of technologies from the tourism demand perspective and/or the environment (for example examining the technology impacts on tourists' perceived risk, travel
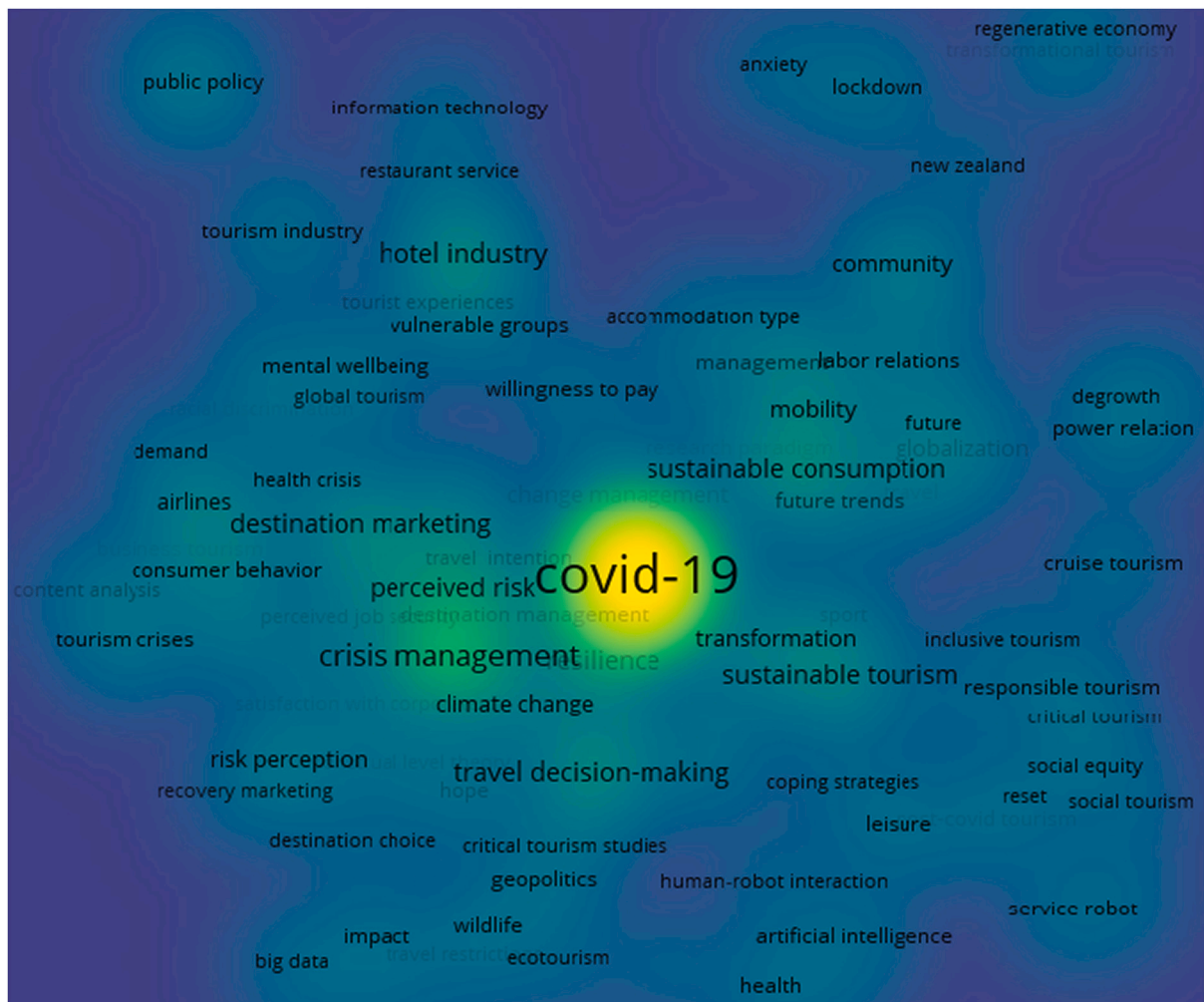
Fig. 2. Network visualization of keywords in tourism and hospitality literature related to COVID-19 in VOS Viewer.

intentions, behavior) (Christou et al., 2020; Lau, 2020; Oliveira et al., 2021).

Although the pandemic has magnified and intensified the role of technologies in creating and managing (new) tourism experiences and interactions (Fennell, 2021; Gretzel et al., 2020; Sigala, 2020), there is no research examining how to best exploit technologies and optimize their benefits and potential in the post-pandemic tourism whereby hybrid, digital experiences and work practices are becoming the expected new norm. More future research is required to investigate the optimal fit and outcomes pertaining: the design of tourism experiences and technologies design; and the integration of technologies into organizational systems and human behavior. Because of the socio-technical nature of technology applications and their impacts, future research should adopt a multi-disciplinary approach to better understand the economical, psychological, legal and political implications of technology in post-pandemic tourism (e.g. the privacy/ethical issues of tourists' mobility tracing, issues related to robots and human resources).

3.1.1.2. Destination marketing. Destination marketing needs to address the increasing tourists' concerns about safety and health, as these are perceived under the light of the new normal. Safety and hygiene at a destination are known to be important factors influencing visiting intentions (Chua, Al-Ansi, Lee, & Han, 2020; Ivanova et al., 2020). Studies have focused on the negative effects of COVID-19 on destination image and preference, as tourism demand has shifted to local destinations due to borders' closures, mobility restrictions and risks (Ioannides &

Gyimothy, 2020; Kiesnoski, 2020; Mackenzie & Goodnow, 2020; Taecharungroj & Mathayomchan, 2020). Because of the latter, regional destinations and attractions have faced capacity issues, while they also need to strategize on how to compete with other (local) destinations and develop a tourism product and capabilities to satisfy a type of tourism demand that they did not previously attract. Further, destinations whose image had been damaged due to COVID-19 incidents and negative publicity need to formulate an image repair strategy by learning and reflecting on previous crises. However, there is limited research and knowledge within the destination marketing literature on how to repair destination image over the course of a pandemic (Avraham, 2015, 2020) and how to re-develop and re-position destinations that used to have an over-tourism or large gathering image (e.g. crowded night food markets, Mediterranean resorts and/or cruise ship holidays/destinations).

On the one hand, research advocates that to restart, destinations need to be re-positioned by developing new value propositions that communicate sensitivity for local culture and communities, as well as concern and care to the travelers' well-being (Chemli, Toanoglou, & Valeri, 2020). On the other hand, many academic publications also report and suggest revenue-boosting strategies for 'getting back to normal' and achieving the pre COVID-19 tourism 'numbers'. These conflicting research perspectives highlight that future tourism research needs to become less 'theoretical', philosophical and idealistic, and to better relate and guide the industry by offering translational and meaningful practical suggestions that advance theory and practice; otherwise, tourism research will continue being penalized for

Fig. 3. Density visualization of keywords in tourism and hospitality literature related to COVID-19 (the size of the font reflects the density level).

theorizing. Finally, research also documents the role of creating positive CSR perceptions for boosting destination attachment for post COVID-19 travelers (Chua et al., 2020). Destination image will continue to influence visitation intentions in post COVID-19, but it would need to reflect and relate to the various physical, socio-psychological, and financial values of the new normal (e.g. sustainability/climate change, fairness and equity in tourism income distribution, well-being) (Ahmad, Jamaludin, Zuraimi, & Valeri, 2020).

3.1.1.3. Impact of COVID-19 on tourist mobility and tourist well-being.
During the pandemic, the social fabric got damaged and fragmented, and various studies report the former's impact on people's social and psychological well-being. Analytically, social distancing and quarantine rules have induced fear of separation from loved ones, loss of freedom, uncertainty about the advancement of the disease, and feelings of loneliness, isolation, and helplessness (Saladino, Algeri, & Auriemma, 2020). Restrictions on mobility and concerns about the future have led to heightened anxiety among people and negatively affected their well-being (Wong & Yang, 2020). Tourists also find themselves feeling unwelcomed by the locals (Yang & Wong, 2020), while anti-china racist discriminations are also reported (Sigala, 2020).

Research has mainly emphasized the negative effect of the pandemic on tourists' well-being, as they may face discrimination at tourist sites (Yang & Wong, 2020). On the other hand, travel may also emerge as an activity restoring the damaged people's well-being and life satisfaction, and the damaged economy (re-creating jobs and income) in many

regions globally. In this vein, tourism organizations would need to develop services that can uplift the (damaged) people's and communities' well-being. The re-set being induced by COVID-19 also entails that there is a need to re-imagine tourism within local areas and motivate tourists to engage in sustainable activities (Fennell, 2021; Mackenzie & Goodnow, 2020). It is thus suggested that to build back better, sustainable tourism will increasingly need the support and the (re)-activation of tourism demand, whose role was not that emphasized by research in pre COVID-19 period.

3.1.2. Future of tourism in post-COVID-19: crisis, recovery, and future
While the pandemic is affecting lives and livelihoods, a major stream of studies also pays great attention on how to recover and (re)-develop tourism in the future. The major tenet of the articles within this theme is how to recover tourism with the vision to build back better. Specifically, articles develop their discussions around three major sub-themes: dealing with the ongoing crisis (Alonso et al., 2020; Kaushal & Srivastava, 2021); suggesting recovery strategies (Cardoso, 2020; Kukanja, Planinc, & Sikošek, 2020; Yeh, 2021); and envisioning the future of tourism and hospitality (Prideaux, Thompson, & Pabel, 2020; Sigala, 2020).

3.1.2.1. Future of tourism in post-COVID-19. Though tourism is considered a vital element for many economies, all the articles raise voices criticizing the contemporary practices of tourism development and the 'problems' that they have raised, as well as stressing that COVID-19 has

simply intensified the overdue need to make tourism more sustainable. Studies have even questioned assumptions that we have taken for granted, i.e. capitalism and economic development as unstoppable forces and the only way to growth (Sigala, 2020). Articles are also visionary by identifying (pre-existing) problematic areas that the COVID-19 made more evident and magnified the urgency to address them by re-imagining and resetting 'better' tourism futures (Singh, 2020). Though there have been numerous calls to redefine the future of tourism, the path for reinventing tourism remains complex and difficult, as business resources and capabilities to take such change risks are not abundant and/or lacking (Haywood, 2020).

It is also very likely that organizations may return to their old business models and adopt survival strategies rather than a re-setting strategy as provoked and envisaged during the pandemic (Niewiadomski, 2020). On the contrary, many also see COVID-19 as an opportunity to reset unsustainable tourism practices and to invest on practices with a welfare motive for the environment, the destinations, communities, and tourists (Benjamin, Dillette, & Alderman, 2020; Higgins-Desbiolles, 2020a, 2020b; Jamal & Budke, 2020; Prideaux et al., 2020). Overall, the post COVID-19 future of tourism is heavily envisioned around sustainability, responsibility, welfare and equality; however, research is still due to examine whether, how and by 'whom' the promises of the tourism re-build back better and the re-set envisions would materialize or not and why.

3.1.2.2. Sustainable tourism and sustainable consumption.

The pandemic has revived discussions and generated numerous papers re-stressing on how to make tourism more sustainable. Several researchers call for promoting sustainable tourism practices and consumption (Ioannides & Gyimothy, 2020). Articles also stress the need for community inclusion into sustainability practices and the alignment of tourism products/ services with sustainable development goals (Galvani, Lew, & Perez, 2020). Articles also highlight that it is not only the tourism supply (firms, organizations and governments) but also the tourists themselves that need to become more sustainable (Jones & Comfort, 2020). Despite the theoretical proclamations for sustainable tourism and consumption, studies have failed to examine so far whether and how sustainability, sustainable tourism and practices are implemented or not during the pandemic (Fennell, 2021; Vargas, 2020). On the contrary, research analyzing (tourism) policies found relaxation in environmental requirements in the name of 'cleanliness' and safety and to promote tourism consumption/spending (Jones & Comfort, 2020); however, these are detrimental to sustainability goals. Hence, research should examine not only how the pandemic can accelerate and re-set sustainable tourism practices and policies, but also: how to boost and enforce sustainable tourism consumption; and how to manage sustainability tradeoffs (e.g. economic benefits vs human lives and environmental impacts). Otherwise, tourism may remain a clarion call without action (Benjamin et al., 2020; Romagosa, 2020).

3.1.2.3. Crisis management and tourism recovery.

If there is one major tourism lesson learnt from the pandemic, this is how to manage and learn to deal with a crisis. Although tourism is not unfamiliar from crises, (e.g. local terrorist activities, the Ebola virus, tsunami, Jiang & Ritchie, 2017; Samitasa, Asterioub, Polyzosc, & Kenourgios, 2018; Yeh, 2021), COVID-19 is very peculiar, as it is not only a global crisis but also a multi-faced one, (i.e. biological, financial, environmental, socio-psychological, geo-political and even cultural crisis). Articles in this theme reflect on learnings from previous crises to discuss how tourism stakeholders can identify and address not only the impacts of this current crisis but also recover and get ready for future challenges. Issues that organizations need to address include but are not limited to (Kaushal & Srivastava, 2021; Kukanja et al., 2020; Yeh, 2021): dealing with a workforce, cost control, marketing destination post-crisis, and dealing with the negative tourist perception post-crisis. Researchers have

presented guidelines to recover from the current pandemic (Cardoso, 2020), however, limited studies have considered the process of recovery for different sized firms, as big, small, family and/or one entrepreneur firms have been affected differently by the pandemic. Tourism as a business activity provides livelihood to various micro-segments of the society and it is necessary to include but also consider the peculiarities of all sub-groups into the recovery process (Cardoso, 2020; Thomas, 2020). As tourism equally impacts society and the economy, papers stress the need to develop tourism recovery plans that adopt a more collaborative, open communication and trust-building approach with all the tourism stakeholders (Jiang & Ritchie, 2017; Prayag, 2020; Yeh, 2021).

3.1.3. Managing change in the tourism industry: change, resilience and transformation

Several economies have relied on tourism as a major economic activity percolating the large, medium and small enterprises as well as local communities. When COVID-19 halted global tourism, every stakeholder had to respond to ensure immediate survival, but also future business continuity and competitiveness; the economic slowdown also provided an opportunity for tourism stakeholders to transform and work toward a more resilient ecosystem that can absorb future shocks. Thus, it is not surprising that several articles cluster around a third theme focusing on how tourism stakeholders have been managing and should manage change, as well as the issues and challenges intensified and generated due to the pandemic. Consequently, two major sub-themes have emerged in this theme: change management; and resilience and transformation in the post COVID-era. In relation to the previous theme, articles in this theme tend to be more long-term than short-term oriented, as they aim to identify the areas of change as well as the capabilities that firms have to build to achieve such transformations. However, studies so far tend to be theoretical lacking empirical evidence and insights. Thus, there is an opportunity for future tourism research to investigate transformational and change processes, stakeholders and outputs in a long-term perspective, which in turn can also reveal useful insights about the resilience and change capabilities and strategies of tourism stakeholders.

3.1.3.1. Change management.

COVID-19 is argued to have profound and long-term impacts on tourism, and so, managing change in the tourism industry is argued as a high-priority area for researchers and practitioners alike. Articles also debate 'effective' change management processes (i.e. collaboration, goal alignment and mutual support) among all tourism stakeholders and envision transformational outcomes (e.g. reduced carbon footprint, promotion of domestic tourism, and welfare of local communities) (Gössling & Higham, 2020; Prideaux et al., 2020). Articles also advocate appropriate approaches (e.g. systemic thinking and chaos theory) that need to be adopted for dealing with the perplex pandemic crisis and its complex systems, unexpected and unimaginable impacts and changes (Zenker & Kock, 2020) that the industry needs to face, such as (Chemli et al., 2020; Zenker & Kock, 2020): low tourism demand, lack of finance, negative media coverage, and unobservable changes such as tourist behavior, risk perceptions, destination image, and resident attitude toward tourists. Although this stream of studies provides numerous multi-disciplinary suggestions for guiding change management, it tends to be the most 'theoretical' lacking empirical evidence and insights about the adoption and/or impacts of suggested change strategies. Hence, there is a huge potential for future tourism research to adopt longitudinal, in-depth, qualitative but also quantitative studies to understand and measure the processes and outcomes of such change strategies as well as to use this unique COVID-19 context to expand and advance change management theories.

3.1.3.2. Resilience and transformation.

To deal with mammoth changes and crises, the tourism industry has to display resilience. Hence, the resilience of destinations, organizations, and tourists alike is suggested

as an important area for research and practice (Prayag, 2020). Articles (Brouder, 2020; Lapointe, 2020; Melián-Alzola, Fernández-Monroy, & Hidalgo-Peñate, 2020) discuss several antecedents and capabilities (e.g. strategy and change management) to build resilience; they also call for a 'total transformation', as they emphasize not only the need to challenge and change old practices but also to redefine and reset tourism as a purposeful activity reflecting a continuation of a meaningful life rather than a 'consumerism' escape from a meaningless and boring life (Sigala, 2020). However, studies exploring resilience have focused only on large organizations ignoring the small or family businesses. Given the dominance of small organizations in tourism, future research is highly required to better understand and support transformation management and resilience building capabilities within small organizations. As crises will persist in tourism, the industry has to reimagine how to develop a resilient ecosystem that can ensure the survival of small organizations and vulnerable communities (Sharma et al., 2021). Overall, articles consent that the industry needs to respond to the pandemic with a transformational approach in order to ensure that tourism emerges as a pivotal human activity contributing to environmental sustainability and the people's well-being.

3.1.4. Impact of COVID-19 on the tourism and hospitality stakeholders

The tourism and hospitality industry is one of the worst-hit economic sectors during the COVID-19 pandemic. So, as it is expected (Sigala, 2020), numerous articles focus on examining the impacts of the pandemic on the tourism and hospitality stakeholders. However, although research identifies impacts at all levels (i.e. at industry, organizational and employee level), studies pay detailed attention only to impacts related to employment and the employees' welfare. This may not be surprising when considering the high labor intensity of the tourism industry and so, the immediate and enormous losses of tourism jobs due to COVID-19, which in turn severely affected lives, livelihoods, societies, and governments. However, despite its significance, this theme of research has so far attracted significantly fewer articles. This is not surprising again, as impact studies require time for impacts to become noticeable, measurable and reliably linked to specific causes. Hence, as time needs to pass so that we can more reliably identify and measure the impacts of COVID-19, it is expected that the need for impact research studies would intensify and be indispensable for many years to come.

3.1.4.1. Effect of COVID-19 on the relationship between tourism organizations and employees.

Apart from the COVID-19 impact on the tourism firms' financial position and viability, studies also provide evidence and stress the need of tourism organizations to depict corporate social responsibility (CSR) and to act as per professional ethics and social expectations (Filimonau, Derqui, & Matute, 2020; Mao, He, Morrison, & Andres Coca-Stefaniak, 2020; Vo-Thanh et al., 2020). However, although research emphasizes that organizations need to deal responsibly with all stakeholders, i.e. employees, communities, and governments (Baum, Mooney, Robinson, & Solnet, 2020; Sigala, 2020), almost all studies focus on the role of CSR on the organizational-employee relation. For example, preliminary findings (Mao et al., 2020) also suggest that CSR activities have positively impacted employee self-efficacy, hope, resilience, optimism, and their satisfaction with the corporate response to COVID-19. Another study (Vo-Thanh et al., 2020) also found that the employees' satisfaction with the organizational response to the pandemic mitigates the negative impacts of employees' perceived job insecurity on their performance. In other words, research shows that organizational CSR is even more indispensable during the COVID-19 crisis in order to alleviate the severe emotional challenges (e. g. compassion, racism, and job security) generated to tourism employees (Park, Kim, & Kim, 2020) and maintain the employee satisfaction and performance. Hence, dealing with the pandemic becomes a moment of truth for organizations to prove their CSR commitment and prove their

ability to strengthen and customize CSR strategies to address the specific crisis circumstances and context. In general, because the pandemic has induced a lot of job stress and anxiety that in turn is diffused within the people's personal and social lives, research looking into the impact of the former on employee performance and behavior has become and will be an important field of research (Gursoy & Chi, 2020; Yu, Li, Yu, He, & Zhou, 2020; Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020).

Future research can deepen examinations by looking into more micro-level CSR effects, such as the impact of CSR on employee motivation and perceptions, on organizational resilience and job security among senior managers (Filimonau et al., 2020). To better examine and unravel the impact of CSR policies on 'sensitive' employees' attitudes, behaviors and mental health, research should also adopt research methods that go beyond the traditional survey methods. For example, by analyzing online comments on a popular social media website, Park et al. (2020) found several hidden issues (e.g. racism, safety and other employment concerns) that are not easily said or reported. Finally, future research should widen research into CSR by investigating its role and impact in driving and activating a sustainable role and relation of tourism organizations with all tourism stakeholders. To build back better, tourism organizations should show responsible and ethical behavior toward all tourism stakeholders and not only to employees (Sigala, 2020). Thus, research should examine and inform the diffusion of CSR in all business operations across the value chain (e.g. tourism product design, performance measurement, supply chain management, customer engagement, communities); by doing this, research can better guide tourism organizations to develop and activate an authentic purpose in the post COVID-19.

3.1.4.2. Impact of COVID-19 on vulnerable groups in the tourism industry.

This stream of research has focused on the "*undeclared work*" (defined as work "*hidden from the view of the state enforcement authorities*", Williams & Horodnic, 2020, p. 15) and the need to identify and consider the impact of the pandemic on this hidden and vulnerable group of tourism stakeholders, because their existence is often not officially documented and so, 'managed'. Tourism heavily relies on the existence of undeclared work (e.g. 'black' labor, sharing economy micro-entrepreneurs), whose welfare, income and jobs have been severely affected by COVID-19, but they are not eligible for any government support (Williams, 2020; Williams & Kayaoglu, 2020). The need to focus on this niche topic becomes even more apparent because, although there are several calls to focus on sustainable, responsible, and inclusive tourism, research has not paid any attention yet to the impact of the pandemic on vulnerable groups, while studies are also mainly conducted in western economies whereby the phenomenon of undeclared work is also limited (Jamal & Budke, 2020; Sigala, 2020). For example, there is a huge undeclared labor serving tourism in developing economies (such as India and Brazil), which in relation to developed countries, they have even been impacted more and governmental support and subsidies are almost minimal. Moreover, as the size of the informal economy has been constantly rising at a global scale (e.g. the global boom of the sharing economy and increased migration resulting in cheap labor), there is an urgent need to study the impact of the pandemic on these vulnerable and oftentimes 'hidden' groups from official statistics in order to formulate appropriate public policies to support their financial and psychological welfare (Knight, Xiong, Lan, & Gong, 2020). Articles have also stressed the need to consider and support other vulnerable groups of employees (i.e. immigrants and minorities), who although 'declared work', they have to deal with additional stress of job loss and job insecurity during the pandemic (Sönmez, Apostolopoulos, Lemke, & Hsieh, 2020). For instance, research (Madgavkar, White, Krishnan, Mahajan, & Azcue, 2020) showed that women's jobs are 1.8 times more vulnerable to this crisis than men's jobs; women also constitute 39% of global employment but account for 54% of overall job losses. Overall, this sub-theme stresses the need for governments and the industry to play a

significant role in identifying and protecting such vulnerable groups (Jamal & Budke, 2020; Knight et al., 2020).

4. Directions and propositions for future research

The bibliometric analysis revealed existing knowledge and research priorities, that in turn helped us to identify gaps and future research directions. Appendix 1 lists several research questions under each theme based on the following discussion of future research directions. The following sections further analyze these future research directions and propositions that are categorized based on the four major themes as identified above.

4.1. Impact of COVID-19 on travel decision-making, destination marketing, and technology adoption

There is a consensus that many of the COVID-19 impacts and implications as well as the new enforced reality are going to alter tourist behavior. The pandemic has forced everyone to re-think about the real essence, purpose and meaning of travel, leisure, and work. In addition, the perceived risks and anxiety imposed by the pandemic have introduced new factors influencing tourist decision-making and recalibrated the tourists' priorities. Although research offers some preliminary findings and suggestions about the new ways and factors that the tourists consider when taking travel decisions (Ahmad et al., 2020; Peluso & Pichierri, 2020), more in-depth research at micro-level is required to elaborate on the nature and impact of these changes on the tourists' decision-making (Adongo, Amenumey, Kumi-Kyereme, & Dubé, 2021; Li, Zhang, Liu, Kozak, & Wen, 2020). Existing studies mainly adopt a risk-based perspective to investigate travel decision making and ignore the influence of factors like sustainability, well-being, purpose and transformation on travel decisions, behavior and preferences despite the fact that all these factors are acclaimed as the next new normal for tourism in the post COVID-19 era. Research is also required on how destinations and tourism firms should best mitigate and address the tourists' perceived risks, as studies exploring the risk development process and risk mitigation process are scarce. For example, current findings (Chevtaeva & Guillet, 2021; Neuburger & Egger, 2020; Wen, Kozak, Yang, & Liu, 2020) reveal that crisis communication, tourists' experience with the firms during the lockdown, and personal characteristics determining one's ability to deal with the crisis are likely to impact the tourists' decisions to choose a travel firm and a destination; however, further research is required to examine the persistence of these factors on tourists' behavior as well as the ways in which the industry needs to update current offerings to address any changes in tourism demand. Research on COVID-19 and tourism strongly advocated that there is an urgent need to re-examine and understand the tourists' decision-making and behaviors under the 'new' normal (Bae & Chang, 2021; Peluso & Pichierri, 2020; Wen, Kozak, et al., 2020). Similarly, studies advocate that to address and appeal to the 'new' tourists, destinations need to be marketed differently by positioning themselves with 'new' value propositions, experiences and offerings (Ahmad et al., 2020; Chua et al., 2020; Ivanova et al., 2020). Hence to advance our post COVID-19 knowledge and research, studies should start investigating the new 'factors' influencing and predicting tourism demand and behavior such as vaccination (Adongo et al., 2021), lockdown captivity Irimiás and Mitev (2020) and risk perceptions (Zhan, Zeng, Morrison, Liang, & Coca-Stefaniak, 2020).

Technology has become an integral part of the tourist experience and decision-making (Shin & Kang, 2020), while the pandemic has magnified this already vital role of technologies (e.g. virtual and augmented reality, artificial intelligence, robot-supported services, contact and mobility tracing) in the re-start and re-set of the tourism industry (Gretzel et al., 2020; Seyitoğlu & Ivanov, 2021; Wen, Wang, Kozak, Liu, & Hou, 2020). COVID-19 has also accelerated technology adoption and innovation by both tourism demand and supply (Sigala, 2020). As we

already knew very little about the impact and use of these technologies on tourism experiences, tourists and the industry overall, research focusing on the transformational role of technologies on tourism is highly warranted during and after this pandemic (Gretzel et al., 2020; Xiang, Fesenmaier, & Werthner, 2021). For example, research investigating the technology impacts and trade-off (such as health/safety Vs privacy/ethical issues, productivity Vs job losses and transformation of job descriptions) is highly warrantied.

Proposition 1. New models of travel decision-making will emerge in light of the crisis, requiring the tourism and hospitality industry to innovate and transform its offerings, value propositions and business operations.

Proposition 2. Accelerated technology adoption and innovation will magnify technology induced changes in tourism demand and supply.

COVID-19 restrictions and measures such as lockdowns, mobility bans and tracing have curtailed basic human rights in the name of health and social benefit. For example, Article 13 of the Universal Declaration of Human Rights (UDHR) stipulates the rights of all to freedom of movement within their own country and the right to leave and re-enter that country; Article 24 specifies the right to leisure, limitations to working hours, and holidays with pay (Baum & Hai, 2020). Many COVID-19 enforced practices (e.g. work from home, *workcation,* online social and work meetings, classes, conferences) are also here to stay in a virtual or even blended approach. However, these travel restrictions and virtual experiences undermine people's well-being, as virtual communication is not found to be the best substitute to any face-to-face human communication, socialization and work practice. Research has mainly emphasized the negative effect of pandemic on tourist well-being due to discrimination at tourist sites, lack of mobility, anxiety etc. (Yang & Wong, 2020), however, it is also likely that as people face anxiety and distress due to lock down, travel may emerge as an activity providing well-being and satisfaction. Wen, Kozak, et al. (2020); Wen, Wang, et al. (2020) also point out the lack of tourism research investigating the effect of misleading information coverage by the media on racial discrimination and mental health on tourists and other tourism stakeholders. Tourism organizations would also need to develop services that promote well-being and satisfaction after a period of restricted mobility. Hence, there is a need to focus on and re-examine the well-being of tourism stakeholders' (i.e. employees tourists, communities) by adopting a well-being and mindfulness theoretical lens, which implies that tourism is not only a hedonic activity but it can also be a meaningful activity promoting a better quality of life and happiness (Knobloch, Robertson, & Aitken, 2017; Stankov et al., 2020; Vada, Prentice, Scott, & Hsiao, 2020;).

Proposition 3. Research investigating the positive and negative effects of COVID-19 on tourist experiences and well-being can aid in redefining the purpose and meaning of tourism in the post-pandemic world.

Apart from lives and livelihood, destinations as a whole have also been severely impacted (Zenker & Kock, 2020). Many of these destinations have been subsequently also impacted by the (social) media communications and content distributed globally, which in turn shape the destination image and affect tourists' future visiting intentions (Ahmad et al., 2020). Research is now empowered with advanced tools and techniques (e.g. big data and machine learning) to analyze the projected destination image in the pandemic (Taecharungroj & Mathayomchan, 2020), but more research studies are equally required to investigate the impact of COVID-19 on destinations' offerings and positioning, communities' welfare, social capacity, resilience and abilities to bounce back and address the new tourists' demand (Taecharungroj & Mathayomchan, 2020; Yu et al., 2020). Chua et al. (2020) investigates the effect of CSR on destination attachment for post COVID-19 travel and suggests that role of group travel and destination

characteristics should be explored in future studies. Given the multifacet impact of COVID-19 and tourism as a social practice and business activity, destinations would need to involve all related stakeholders (e.g. governments, policymakers, hospitality firms, and local communities) to reinvigorate their offerings and utilize marketing to re-position themselves as a safe and responsible destination.

Proposition 4. A better understanding of the impacts of COVID-19 on destinations is required in order to guide the development of building back better destination management and marketing strategies in the post-pandemic.

4.2. Future of tourism post-COVID-19: Crisis, recovery, and future

It is challenging to envisage post-COVID-19 tourism and plan for a future that may invite more fear and challenges to survival. After a financial and psychological shock to various stakeholders, it is imperative to transform tourism into an activity that can influence humanity positively. A three-step approach is recommended, which includes dealing with the crisis, recovering from the crisis, and preparing for future crises (Ritchie & Jiang, 2019). There is a need to conduct more research on how organizational objectives and strategies should evolve during different phases and what collaboration and support should be sought for an effective transition. Crisis management requires cooperation among industry and government (Cardoso, 2020; Jones & Comfort, 2020; Vargas, 2020). Stakeholders will need to understand the principles guiding sustainable development and adhere to them for effective recovery (Cardoso, 2020). However, although several articles posit crisis as an opportunity to redesign tourism, very few studies provide practical guidance and a framework to achieve such transformation. Moreover, research is also required to measure the impact of government recovery policies on the tourism industry and then better inform policy makers for more appropriate actions. Future research should also consider any country-specific factors. For example, Farzanegan, Gholipour, Feizi, Nunkoo, and Andargoli (2021) conducted a cross country analysis and found that countries prone to a high number of international tourists are more likely to face COVID-19 cases and deaths. On the contrary, Karabulut, Bilgin, Demir, and Doker (2020) investigated the effect of previous pandemics on tourist flow and found that tourist arrivals are negatively impacted by pandemics only for low-income countries and not for advanced economies. Although it may not be possible to 'copy paste' policies from one country context to another, comparative cross-country studies can still be instrumental and informative in learning through benchmarking and so, shaping and adapting national tourism strategies and policies.

Research has focused on promoting sustainable tourism and consumption to reset tourism in the post COVID-19 era; however, there is a need to adopt a holistic approach by understanding the environment, cultural and industry-specific practices (Grilli, Tyllianakis, Luisetti, Ferrini, & Turner, 2021). As more tourists may choose a destination that is off the tourist map for ensuring safety and social distancing, it may also pose a threat to the sustainability of such destinations, which may not have a strategy to ensure sustainability (BBC, 2021). Further, understanding tourist behavior from an ecological perspective is critical in designing tourist services that promote sustainability. The pandemic has certainly sensitized tourists toward the idea of climate change, but it is imperative to investigate whether tourists are ready to pay and change their behavior by also adopting sustainable practices. Further, it is essential to investigate the role that would be played by the destinations, governments, tourists, and local communities in ensuring sustainable tourism (Lee & Jan, 2019). As the industry gears up for recovery, it will have to redesign services to inculcate the lessons learnt from the pandemic and collaborate with various stakeholders to transform tourism as a pivotal activity.

Proposition 5. To expedite tourism recovery in the post pandemic, research should inform the redesign of tourism services and infrastructure as well as foster a change in tourists' attitudes, preferences, and behaviors.

4.3. Managing change in the tourism industry: change, resilience, and transformation

As the tourism and hospitality industry gears up for the recovery phase, managing change effectively will be instrumental for swift adaptation to the new reality. The financial shocks and changing dynamics between stakeholders will fuel the need to change the process effectively. Communication of the changes by the top management to organizational stakeholders to ensure stakeholder commitment and activation in transformation is currently found as an important area of research (Im, Kim, & Miao, 2021). Although there is a huge literature on disaster and crisis management in tourism (Nguyen, Imamura, & Iuchi, 2017; Ritchie, 2008), research investigating how to manage change and transformation after learnings from a crisis is very scarce. Research investigating the latter is currently very important because although there have been many theoretical proclamations on how the new next normal for tourism should be, we know nothing about whether, how, by whom and why these 're-imagination' and 're-setting theories will materialize or not in the future. Hence, there is an increased need to migrate from 'theoretical' and philosophical tourism research, to hand-on tourism research that can have practical meaningful implications guiding and informing the industry to change and re-set. Similarly, there is a need for tourism research to understand and report the processes, the stakeholders as well as the constraints and facilitators and outcomes of such 're-setting' strategies in tourism.

Further, there is a need to study and understand resilience from a wide understanding and perspective of tourism stakeholders, e.g. big but also small and family firms, from a community to an individual employee and tourist perspective (e.g. Sharma et al., 2021). Research should also investigate the role, engagement and impact of various stakeholders on tourism change and transformation, since past research (Mariani, Buhalis, Longhi, & Vitouladiti, 2014; Prayag, 2018) shows that the inclusion of various stakeholders in the change process is imperative to drive the process successfully.

Proposition 6. Understand the abilities, process and outcomes of resilience, change and transformation from multiple tourism stakeholder perspectives that also considers various micro- (e.g. individual and organizational) and macro- (e.g. country- contextual) factors.

The COVID-19 context also demands that organizations display resilience and willingness to transform. As resilience has been posited as a key value for the survival of firms under uncertainty, it is unclear what are the characteristics of a resilient organization in the tourism industry and how an organization can become resilient (Prayag, Spector, Orchiston, & Chowdhury, 2020; Ruiz-Martin, López-Paredes, & Wainer, 2018). What will be the role of internal and external stakeholders in promoting resilience? Moreover, the resilience of tourists, communities, and small entrepreneurs should also be a research focus, ensuring that vulnerable stakeholders can survive such crises in the future. There is a need to focus on innovation on both demand and supply side as a catalyst for change management and transformation (Brouder, 2020). The hospitality industry has been quick to respond to and exploit new business opportunities arising due to the pandemic, such as the food delivery to essential workers and residents under lockdown, the redesign of hotel spaces for remote workers. Despite these short-term and opportunistic changes, tourism needs to reinvent, transform and re-position itself as a responsible industry that contributes to the welfare of the environment, society, and future generations (Rowen, 2020).

Proposition 7. Investigate the role of resilience, innovation and responsibility in driving effective transformation in tourism and hospitality.

4.4. Impact of COVID-19 on tourism and hospitality stakeholders

While there is ample discussion on the impact of a pandemic on the hospitality and tourism industry, economy, and tourists, one group that seems to be left behind is the vulnerable groups in the tourism industry (Truong, 2018). Tourism is considered as an activity that influences various 'hidden' groups such as housewives, immigrants and micro-entrepreneurs being part of the informal tourism economy. COVID-19 and its repercussions have deeply affected the well-being of these 'hidden' tourism players but also many other stakeholders; for example research reporting findings (Baum & Hai, 2020; Madgavkar et al., 2020) such as: increased pressure to family members of tourism workers due to household work, job losses and financial constraints; increase of domestic and sexual violence.

Contractual workers and migratory workers were at a greater loss, with a huge wage gap and job loss among women and young employees. As per an ILO report (2021), women faced a higher employment loss, 5% more than men, and more young workers lost jobs than older workers. However, a limited number of studies have evaluated the influence of the pandemic on these vulnerable groups, who are also not included in the beneficiaries of financial aids and bailout packages or tax benefits. Therefore, intervention from the tourism industry, governments, and policymakers are required to ensure the welfare of such vulnerable groups (e.g. informal workers, minorities employed in industry, peer to peer accommodation providers, differently-abled employees, and micro-entrepreneurs) (Farmaki et al., 2020; Jamal & Budke, 2020; Kreiner & Ram, 2020). The need to identify and understand the impact of the crisis on these vulnerable/minority industry groups is of high importance, as ignoring the latter is quite dangerous and oblivious in informing effective, equitable and fair tourism recovery plans and policies.

Proposition 8. Tourism recovery plans and policies have to identify and support vulnerable groups, such as minorities, local communities, informal workers, and micro-entrepreneurs.

Employees have played a pivotal role in sustaining economic activities during the pandemic by imperiling their health and safety. Understanding and measuring the (long-term) impact of tourism jobs and tasks on employees' health and well-being is an important research area (Mao et al., 2020; Park et al., 2020). It is equally important to investigate the impact of COVID-19 on the future tourism labor market and prospective employees (Sigala, 2021a). Although there is some research (Filimonau et al., 2020; Vo-Thanh et al., 2020) investigating the impact of COVID-19 on employees' morale and performance, these studies do not thoroughly investigate and measure the impact of COVID-19 on different types and levels of employees (e.g. top and middle managers to operational staff, or casual and permanent workers), which is important to better understand and address COVID-19 implications on tourism employment issues. Research is also required concerning employee training and capabilities development to ensure the employees' welfare and the provision of safe and appealing tourism services and experiences during and after the pandemic (Zhang et al., 2020).

Proposition 9. Understanding, measuring and addressing the impact of COVID-19 on employees' welfare is important for an effective future tourism labor market and the provision of safe and appealing tourism experiences and services.

5. Conclusions

One year after the beginning of the pandemic, this study adopted a bibliometric approach for conducting a reflective review of the existing literature investigating the impact of COVID-19 in tourism and hospitality. Co-word analysis (using VOS viewer) was conducted for constructing the intellectual base and structure of COVID-19 related literature in tourism and hospitality.

Findings from the bibliometric search have shown that the tourism and hospitality scholar community and journals have been fast and some of the first to publish and start debating many of the immediate and urgent topics that the COVID-19 has imposed to tourism research and industry alike. Articles published within the first year of the pandemic were found to have focused on four major themes, and 10 sub-themes, namely: 1) Impact of COVID-19 on tourist decision-making, destination marketing, and technology adoption; 2) Future of tourism post-COVID-19: Crisis, recovery, and future; 3) Managing change in the tourism industry: Change, resilience, and transformation; and 4) Impact of COVID-19 on vulnerable stakeholders in the hospitality and tourism industry. By reviewing these categories, the study has contributed to the field by mapping the existing knowledge and identifying gaps as well as suggesting various future research directions. Overall, studies in all these four fields share a common characteristic: they tend to be either prescriptive and/or 'theorizing'. It seems that early COVID-19 tourism research tends to adopt a 'reality-check' approach by re-applying existing knowledge to examine and understand the impact of a 'new' crisis on tourism constructs and phenomena. Although research setting can contribute in knowledge advancement when one extracts meaning from the context, (Sigala, 2021b) advocated that context-based research has also led many researchers to pursue 'replication' studies. As we do not need one more crisis to re-confirm what we already know, COVID-19 related research needs to critically reflect on the factors characterizing both the environmental/situational setting and the nature of the COVID-19 context to advance but also shift our knowledge frontiers to new heights or perspectives. As Rousseau and Fried (2001: 1) claimed *"contextualizing entails linking observations to a set of relevant facts, events, or points of view that make possible research and theory that form part of a larger whole"*.

As we gradually enter the post-COVID-19 era, the fear of the new COVID strain has re-induced anxiety all over the world, and few countries have announced further lockdown and strict control measures on economic activities that in some ways have been starting to flourish (CNN, 2021). Under this continuous uncertainty, academic research has an increased responsibility to conduct rigorous research and offer meaningful insights and directions that do not only advance the scientific knowledge but also offer valuable guidelines to restart but also reset the tourism and hospitality industry (Sigala, 2020). Interestingly, although preliminary studies in COVID-19 and tourism tended to be descriptive and theoretical, more recent research seems to become more thorough, critical and in-depth into its investigations (Zopiatis et al., 2021). Hence, it seems that gradually but steadily, the research field of COVID-19 and tourism is advancing to a mature and knowledge contributing field.

Like every study, this one also has a few limitations. First, it is focused on articles available in the WoS database from 2020 to January 7, 2021. Thus, articles not listed in WoS were not included in this study. As many publication outlets and sources (e.g. consulting reports, governmental studies, unpublished scholarly research) also heavily contribute and influence the scientific domain, future studies can also consider identifying and reviewing these publications as well. One year after the declaration of COVID-19 as a pandemic, the crisis continues, while research related to its nature, impact and implications continues and will continue to flourish for long. Although this study is a useful reflective overview of research published within this first year of the crisis, future research should continue such systematic reviews to provide us future directions and guidance. The bibliometric approach and findings of this study provide a useful framework to continue building and investigating the evolution of the literature related to COVID-19, tourism and hospitality. Finally, future studies can use other bibliometric tools and metrics (e.g. co-citation analysis) to provide more in-depth insights into the intellectual base, structure, and influence of the published literature.

Appendix A. Future research directions on COVID-19 and tourism and hospitality

Clusters	Major theme	Sub-themes	Research questions	Suggested theoretical underpinnings
1	Impact of COVID-19 on tourist decision making, destination marketing, and technology adoption	Travel decision-making and role of technology	How is travel decision-making impacted by perceived risks during a crisis? How immediate tourism demand can be predicted after a crisis by understanding tourist behavior, personalities, and demographics? How preference for destinations has changed under the impact of the pandemic? How different types of tourism (i.e., medical, adventure, religious, business, leisure, group tours, self-planned tours, events/festivals, and international vs. domestic) are influenced by the pandemic and the implications of this on the subsequent recovery phase? How tourist concerns (such as canceled bookings, refunds, stuck during the lockdown, etc.) were managed during the pandemic and how this impacted tourists' attitudes and intentions to engage with a firm? How communication during crisis and risk perceptions influenced tourist intention to travel in the future? How technology can be integrated with tourism services to improve tourist experience and safety concerns? What will be the positive and negative responses of tourists on technology integrated tourism services? Which new and existing technologies can aid the recovery of the tourism industry and how?	Theory of Planned Behavior Regulatory Focus Theory Construal Level Theory Social Identity Theory Technology Acceptance Model Diffusion of Innovation Self-Service Technology
		Destination marketing	How destination image was impacted by mass media during the pandemic and tourist response to such communication? Should destinations attempt to assess and change their image/positioning after the crisis? What social media communication occurred related to the specific destination during the pandemic? How social media can alter the image of destinations post-COVID-19? How the tourists who will be the first to visit the destination after the pandemic will influence destination image through word-of-mouth (ewom)? How destinations will collaborate with tourists and the local community to create a safe environment post-pandemic?	Agenda Setting Theory Uses and Gratification Theory Elaboration Likelihood Model
		Impact of the pandemic on mobility and tourist well-being	How travel restrictions affected the well-being of tourists? What can tourist organizations do to provide experiences that improve tourist well-being? How mobility restrictions can help in promoting local tourism?	Theory of Well-Being Mindfulness Theory
2	Future of tourism post-COVID-19: Crisis, recovery, and future	Future of tourism post COVID-19	Will tourism evolve or remain as it was, post the pandemic? What changes should be included in current tourism practices? How responsible tourism can be promoted and how destinations and tourists will respond to such changes?	Planning Theory Design Thinking
		Sustainable tourism and sustainable consumption	What is the impact of the pandemic on tourists' attitudes toward sustainability in tourism? Are tourists likely to exhibit sustainable behavior during the trip or would they only expect destinations and the tourism industry to follow sustainable practices? How tourism experiences, destination infrastructure, and hospitality services should be redesigned to promote sustainable practices and consumption? What will be the role of tourists, communities, government, and industry in promoting sustainability?	Value Co-Creation Social Cognitive Theory
		Crisis management and tourism recovery	What lessons have been learned from crisis management during the pandemic, and how they can be implemented to deal with minor/major crises in the future? Which innovative practices emerged and were effective in dealing with the crisis impacting organizational sustainability? How the level of impact of the crisis on various stakeholders can be assessed for improving the tourism recovery process? How to assess demand, price services, and communicate benefits in the recovery phase?	Chaos Theory Systems Theory Service Recovery Crisis in Tourism and Hospitality
3	Managing change in the tourism industry: Change, resilience, and, transformation	Change management	How did tourism organizations respond to deal with sudden changes? How the leaders (CEO, top management) in the industry communicated change with stakeholders (customers, employees, community, and business partners)? What models can be developed to manage and communicate the change process during the crisis? How effective change management can lead to effective business strategy and competitive advantage?	Nudge Theory Design Thinking Signaling Theory

(*continued*)

Clusters	Major theme	Sub-themes	Research questions	Suggested theoretical underpinnings
		Resilience and transformation	Which factors make organizations, destinations, and communities resilient? What are the characteristics of resilient organizations? How mindfulness of tourists and organizations can promote transformation in the industry? Is there a possibility to create a new type of tourism that can be inclusive, sustainable, and meaningful?	Resilience Theory Mindfulness Theory
4	Impact of COVID-19 on stakeholders in the hotel and tourism industry	Effect of COVID-19 on the relationship between tourism organizations and employees	What is the impact of an organization's policies and activities during a pandemic on its employees' performance, emotions, and welfare? How employee welfare and well-being can be promoted by devising policies to deal with unexpected changes/crises? How to train and motivate employees to deliver unique experiences to customers while ensuring their safety and well-being? What is the effect of corporate social responsibility on employee performance and organizational identification?	Transformative Service Research Organizational Identification Theory
		Impact of COVID-19 on vulnerable groups in the tourism industry	What should be the role of the government, tourists' organizations, and policymakers in ensuring the survival and welfare of vulnerable groups in the tourism industry? How the informal economy and its workers can be benefited during the pandemic and recovery phase by government welfare schemes and grants? What policies can be designed to protect minorities, local communities, micro-entrepreneurs, contract workers from the shock of crisis? How their labor can be recognized and rewarded appropriately?	Transformative Service Research Value Co-Creation Bottom of Pyramid

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