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The Impacts of Covid-19 on the Tourism Sector: Changes, Adaptations and Challenges

Abstract

This exploratory study charts the transformation of the tourism sector caused by the COVID-19 crisis. The article dissects five key domains of industry transformation: accelerated digitalisation, business model flexibility, human resources, travel restrictions, and risk perception and crisis management. It delineates the industry's changes, adaptations, and associated challenges in each domain. A review and content analysis of 240 publicly available online documents was conducted. The results provide managerial implications and avenues for future research in tourism, including the hybridisation of tourism products, transformation of the service encounter style, adaptation to a shifting travel mode, and increased risk awareness and preparedness.

Keywords: tourism, COVID-19, pandemic, crisis, transformation

1. Introduction

The COVID-19 pandemic devastated the tourism industry worldwide (Schmude et al., 2021). Insecurity, layoffs and uncertainty have plagued the industry globally (Gössling et al., 2020). The pandemic caused a 74% decline in the number of international tourists in 2020 and a loss of one trillion USD in export revenues from tourism (Sigala, 2020; Ketter & Avraham, 2021). Harchandani and Shome (2021) stated that early estimates of the World Trade Organization (WTO) pointed towards a 20-30% decline in global tourism for the year 2020. Furthermore, the recovery of the tourism industry worldwide is expected to take more time than the average expected recovery (Škare et al., 2021). Payne et al. (2021) suggested that the shock from the COVID-19 pandemic can be viewed as permanent and the unprecedented crisis (Sigala, 2020) has seriously impacted the travel and tourism industry (Yeh, 2021).

Recently, academic contributions have discussed the possible effects of the crisis on the tourism industry (Sigala, 2020). These contributions have charted the current impacts and considered the aftermath of the crisis, offering insight to tourism researchers and professionals. For example, Gössling et al. (2020) rapidly assessed the situation in the industry in April 2020. Transformational opportunities were emphasised by Gretzel et al. (2020) and especially by Sigala (2020), who focused on the impacts, behaviours, and experiences of tourism demand, supply, destination management organisation, and policymakers. Moreover, Zenker and Kock (2020) charted potential research paths in tourism.

We build on the work of Sigala (2020) and Zenker and Kock (2020) and expand on the existing knowledge base. Our premise is based on the previously mentioned studies' conclusions that the pandemic is transforming the tourism industry in several ways. Based on the extant literature, we conducted an exploratory study by reviewing publicly available sources dealing with the tourism industry and the pandemic and establishing five domains of transformation. To enable recovery, we must recognise the ongoing changes, understand the

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most probable adaptations in tourism emerging from those changes, and confront any associated challenges related to the five domains of transformation (Kaushal & Srivastava, 2021). This is the main contribution of our article. We also offer extensive managerial implications and future research directions.

The next section of the article discusses five observed transformation trends relevant to tourism: accelerated digitalisation, business model flexibility, human resources, travel restrictions, and risk perception and crisis management.

2. Literature overview

To identify the key domains of transformation for the current study, we performed a literature review searching for articles dealing with COVID-19's impact on the tourism industry, using the search keywords 'tourism', 'COVID-19', and 'impact' in the title, abstract, and/or keywords in Scopus. The search focusing on business and management yielded 303 results. Some articles approached the impact of COVID-19 on the tourism industry from a broader perspective (e.g., Gössling et al., 2020; Sigala, 2020; Harchandani & Shome, 2021; Zopiatis et al., 2021), while others focused on single issues, such as digitalisation (Ketter & Avraham, 2021) and travel restrictions (Shin et al., 2022). Other articles focused on a geographic area to address one or some of the broader issues (Payne et al., 2021; Schmude et al., 2021).

Furthermore, we used an approach proposed by the extant literature (Zopiatis et al., 2021), suggesting an examination of the issues both from a macro- (industry and destination) and micro-level (operations) perspective. Accordingly, we first read the articles assessing the broad impact of COVID-19 on the tourism industry and acknowledged five domains of transformation tourism industry put forth in response to the pandemic: *accelerated digitalisation* (Gretzel et al., 2020; Sigala, 2020; Zeng et al., 2020), *business model flexibility* (Gössling et al., 2020; Sigala, 2020), *human resources* (Zenker & Kock, 2020), *travel restrictions* (Higgins-Desbioles, 2020; Li et al., 2020; Sigala, 2020) and *risk perception and crisis management* (Gössling et al., 2020; Sigala, 2020; Zenker & Kock, 2020). To further confirm the appropriateness of these domains for the current study, we reviewed the articles with a narrower scope (i.e., focusing on single domains and certain geographic areas). No new major domains were identified. This two-fold process helped us to confirm these initially identified five domains as key issues to be investigated in relation to the impacts of COVID-19 on the tourism sector.

2.1. Five domains of transformation

The first identified domain is *accelerated digitalisation*. Most countries fighting the pandemic recommended isolation and imposed lockdowns (Gretzel et al., 2020). Businesses, including tourism, also started to migrate to online services and accelerate the rate of digitalisation (Gretzel et al., 2020), which led to the development of e-tourism or smart tourism, and increased revenues (Morrone et al., 2021). Moreover, digitalisation drove tourism scholars to advocate for more reflective and transformative research in e-tourism (Gretzel et al., 2020). At the micro-level, at first, it was mainly restaurants that implemented digitally driven solutions, such as takeaways and home deliveries (Gössling et al., 2020). Subsequently, other types of tourism firms followed suit. For example, tourism destinations shifted to online marketing, applying different associated marketing strategies (Ketter & Avraham, 2020). Other research proposed service robots as a possible way forward in the 'new normal' (Zeng et al., 2020). Simultaneously, developments in virtual reality (VR), augmented reality (AR) and artificial intelligence (AI) were identified as profound technological trends changing tourism and hospitality (Salazar, 2018), relevant for the post-COVID-19 world (Yung et al., 2021). For example, VR and AR could provide a virtual experience of a place without physically travelling there (Mohanty et al., 2020), and AI-powered service robots may be used as a tool for physical distancing while engaging in tourism activities (Seyitoğlu & Ivanov, 2021). In the long run, such automation technologies may help facilities decrease their fixed costs and improve liquidity (Assaf & Scuderi, 2020).

The second domain of transformation is *business model flexibility*, critical during this crisis, because of the specific nature of tourism: revenue lost one year, such as unsold capacity, cannot be transferred to subsequent years (Gössling et al., 2020). Generally, firms across various industries and sectors, tourism included, adjusted their business models to overcome the negative effects of the crisis (Bartik et al., 2020). On the micro-level, one of the more obvious adaptations of business models was restaurants' shift in focus to takeaway customers and home deliveries (Gössling et al., 2020). Interestingly, Gunay and Kurtulmuş (2021) did not find evidence of a negative impact on restaurants from the pandemic in the US during the analysis period. Consequently, safety measures such as limiting the number of customers served and more rigorous and frequent cleaning of high-touch surfaces in common areas (Gursoy & Chi, 2020) were implemented. These measures share a decreased level of interaction, which may have profound consequences for tourism and hospitality firms because of the contact-intensive character of services offered. In such cases, trust in the targeted restaurant and hotel must be developed to significantly impact purchase intention (Kim & Liu, 2022).

The third domain of transformation is *human resources*. Overall, lockdowns and social distancing have deeply impacted the tourism labour market (Škare et al., 2021); layoffs, furloughs, and rising unemployment rates dominated the related discourse. In the United States, the leisure and hospitality sector suffered the most, losing or furloughing 31% of employment (Cajner et al., 2020). A high unemployment rate in the tourism industry can potentially remain prolonged because of the nature of the industry itself and the long-term consequences of lost revenue (Gössling et al., 2020). Moreover, the issue of job security in the tourism industry was prompted. Lopes et al. (2021) found that in Portugal, older, less educated, less qualified workers and women workers were more vulnerable to COVID-19 unemployment. Consequently, from the perspective of tourism firms, government support has been invaluable (Gössling et al., 2020). A study conducted with tourism employees in Turkey revealed a plethora of government incentives, such as unemployment benefits, short-term working allowance, and unemployment benefit for suspended personnel, and support from firms, such as COVID-19 staff training, the supply of personal protective equipment, and hygienic working environments (Ozdemir, 2020). A study revealed the negative psychological impact of the COVID-19 crisis on tourism industry employees, impairing their well-being (Chen, 2020). Kaushal and Srivastava (2021) observed that crisis in tandem with digitalisation may affect the future need for a service workforce.

Travel restrictions were applied immediately across the world (Seyfi et al., 2020). Moreover, many countries ceased accepting issued tourist visas and closed national borders (Gössling et al., 2020). Speculations arose that COVID-19 passports would ease international travel (Chen et al., 2020). These measures have greatly impacted international, regional, and local tourism (Gössling et al., 2020). Most affected was air travel, as the number of domestic and international flights was significantly reduced (Gallego & Font, 2021). In effect, travel restrictions resulting from the COVID-19 pandemic caused travel, tourism, and hospitality sectors to practically collapse (Gössling et al., 2020). From the tourism firms' perspective, changes in customer preferences together with the changed view on mobility will require the firms in the tourism industry to place greater emphasis on customer communication (Sigala, 2020). At the beginning of the pandemic, more reliance on domestic tourist markets was expected (Gössling et al., 2020), placing more pressure on local tourism and hospitality firms. Changes in tourists' behaviour concerning preferred modes of travel is perceived as a promising research (Zenker & Kock, 2020). Indeed, Li et al. (2020) considered this issue and found that Chinese residents preferred private car travel, close locations, or postponing of travel plans.

The last domain of transformation is *risk perception and crisis management*. Gössling et al. (2020) noted that the world may have been underprepared to meet a potential pandemic crisis such as COVID-19. Several institutions had issued warnings about potential pandemics and their associated risk, but the 2020 Global Risk Report (World Economic Forum, 2020) on their list of ten risks ranked a pandemic third last in likelihood, tenth in terms of the potential impact on the world economy and as one of the least inter-connected risks. Indeed, Kaushal and Srivastava (2021) posited that, overall, we still fail to sufficiently leverage the

lessons of risk management in preparing for and mitigating uncertainty. Both Sigala (2020) and Zenker and Kock (2020) agreed with this assessment in the context of tourism research and highlighted its importance in future research directions for tourism in the post-Coronavirus landscape. From the perspective of tourism firms, reliance on government measures was crucial. For example, the EU pledged a €1.7tn rescue package to dampen the negative economic effects of the crisis (Nicola et al., 2020). These measures also aimed to stimulate tourist consumption. Moreover, enhancing organisational resilience of tourism firms emerges as a relevant topic. Organisational resilience consists of planned resilience and adaptive resilience, the former emphasising preparation for possible disasters with the help of planning, while the latter emerges as an organisational response after the disaster (Prayag et al., 2018). Recently, Ngoc Su et al. (2021) identified the adoption of human resource practices in tourism and hospitality services in Vietnam, which proved invaluable in developing organisational resilience.

This concludes the overview of the emerging literature on the impact of COVID-19 on the tourism industry. To extend these conceptual efforts, we conducted an explorative study related to these domains.

3. Method

Our study is exploratory and preliminary, similar to Hasenzal and Cantoni (2021), and is in line with recent studies analysing media coverage of the pandemic in the tourism industry and/or responses of tourism firms (Li et al., 2021; Mayer et al., 2021; Thirumaran et al., 2021). Unlike these studies, we decided not to limit our data collection to any specific country or newspapers database due to the broader purpose of our study. More specifically, while Mayer et al. (2021) explored Austrian newspapers to understand media coverage about ski destinations as superspreaders, and Li et al. (2021) examined the most reliable Chinese newspaper databases to discuss the effect of the COVID-19 pandemic on rural and urban tourism in China, we did not limit the data collection to any specific country or region because we intended to grasp changes affecting tourism industry on a general level.

Therefore, we decided to apply a general online search, being aware of the possible bias and deficiencies of such a process. To neutralise search bias due to search engine customisation based on individual history (Hobbs, 2020), we used the Mozilla Firefox web browser in its Private Browsing mode, combined with the DuckDuckGo private search engine. Firefox Private Browsing does not save the browsing history (Mozilla Wiki, 2021), while DuckDuckGo protects users' privacy and avoids the filter bubble of personalised search results (Buys, 2010). Furthermore, we reasoned that search results appearing higher were more relevant, which is also the case for DuckDuckGo (Temperton, 2019).

In designing and performing the study, we devised a structured set of steps similar to Saito and Ruhanen (2017). After defining the search strategy, we defined search keywords. For tourism, related keywords were 'tourism', 'hospitality', 'travel', 'hotel', 'accommodation', 'restaurant', 'airline', 'casino', 'cruise line', 'theme parks', 'events', 'festivals', 'meetings', 'conferences', and 'exhibitions'. For the pandemic, related keywords were 'COVID-19', 'pandemic', 'epidemic', 'corona', 'coronavirus', 'shock', 'lockdown', 'disaster', and 'business continuity'. We performed searches systematically, combining keywords from the two individual categories, leaning on the features of DuckDuckGo being a semantic search engine. Some advantages of semantic search engines are that they understand polysemous and synonymous words, as well as the meaning of given terms, hence providing more relevant information than Google (Khan et al., 2014).

The information appearing as a result of our searches comprised different media coverage, such as newspapers and magazine articles, organisational websites or press releases, government reports, white papers, destination management organisations' (DMO) websites, industry news, industry blogs, SNS (Simple Notification Service; e.g. Twitter), and others. The extracted information was limited to publicly available coverage published between February 2020 and November 2020. Thus, we were able to follow the trajectory of the pandemic, from

early on, when many countries were experiencing the peak of the pandemic to when they were lifting their state of emergency or lockdown and finally back to when lockdown and quarantine measures were reimposed.

The next step was data cleaning. Similar to previous studies, we removed redundancies by using a set of criteria (Thirumaran et al., 2021). Our criteria were: 1) the article must be related to both the tourism industry *and* the pandemic; 2) the article must include information relevant to tourism *and* information about either change(s), adaptation(s), or challenge(s); 3) the article must not be an academic journal article; and 4) the article must not be too short, containing limited information (e.g., the article should not consist of a few sentences pertaining to general information). As a result, we obtained 240 articles in total. Some of the typical examples of outlets are *Hospitality Net*, *Hotel Business*, *CNN*, *Forbes*, *Business Insider*, *Skift*, and *Wired*. The articles included industry analyses, opinion pieces, and interviews with either industry professionals dealing with the pandemic or experts providing advice about how to cope with the crises.

The third step was thematic analysis, a basic method of qualitative text analysis used for exploratory and descriptive purposes (Hasenzahl & Cantoni, 2021). We analysed 60 randomly selected articles before analysing the whole data set and analysed this quarter of the whole data set independent of each other (Hasenzahl & Cantoni, 2021). After comparing the results of the preliminary analysis, we solved discrepancies in the preliminary results and ultimately agreed upon the five domains. Thus, the bias was reduced, and a mutual understanding of categories was achieved. Hence, the result of the preliminary analysis confirmed the five domains of transformation identified from academic literature.

Fourth, a qualitative content analysis was conducted. This approach is particularly suitable for supporting and extending literature insights about a phenomenon (Patton, 2015) and is useful in analysing a phenomenon following a set of categories (Hsieh & Shannon, 2005). The set of categories we used to analyse the data are changes, adaptations, and challenges within the five domains of transformation. To analyse the data, we transferred the dataset into a spreadsheet, designating the title, URL, and summary to each entry. Then we thoroughly reviewed each article to identify the categories it handled. During this manifest coding, we classified part of the text as changes, adaptations, or challenges within a domain of transformation. Then we conducted latent coding to identify underlying themes within each of the categories. In applying manifest and latent coding, our approach was similar to Saito and Ruhanen (2017).

The authors divided the data set coded manifestly equally. We then interpreted the parts of the text classified in the former step, assigning them specific labels. After comparing the results for each of the categories, the authors noticed slight differences in mutual wording. The general interpretation was the same, though. For example, 'hybridisation of tourism products' and 'online/offline mix' were used as labels for the same aspect of changes within the associated domain of transformation. In a subsequent set of online meetings, the authors compared their analysis results and identified the most used labels and themes. Moreover, we examined them according to their relevance and applicability. Finally, we discussed and finalised the findings.

4. Results

The following section presents the most significant observed changes, expected adaptations of the tourism sector, and main associated challenges for each of the five domains of transformation.

4.1. Accelerated digitalisation

The most significant change regarding accelerated digitalisation is moving tourism experiences to online platforms due to the quarantine, together with the expected accelerated development and implementation of VR technologies (Politico, 2020). Logically, as in-real-life (IRL) tourism declined because of COVID-19, online tourism offered a substitute. For example, Tourism Australia introduced live virtual tours on YouTube, showcasing some of the country's most recognisable sites (Skelly, 2020). In Japan, traditional cherry blossoms

were enjoyed in VR (Tomes, 2020). Some online experiences were embedded in video games, offering a combination of games and virtual tourism (Skinner, 2020). This change increases the necessity of integrating digital technology solutions into tourism firms' operations and promoting online tourism experiences in adequate, non-traditional distribution channels.

Besides 'purely' online tourism experiences, the shift to online platforms initiated the creation of 'hybrid' tourism products, mixing IRL and online experiences. These hybrid tourism products frequently combined offerings from several actors. For example, one of Japan's largest department stores, Isetan Shinjuku, offered virtual sightseeing of Tokyo and integrated virtual shopping in the stores and home deliveries of items purchased in VR (Frank, 2020). Moreover, some firms combined restaurant deliveries with online tours (Chandler, 2020). Hybrid IRL virtual tourism products demand the creation of new or updated constellations of actors that are jointly delivering offerings to the customer.

We expect that these two changes should prompt several adaptations in the sector. First, as virtual tourism will likely become more accepted, the tourism industry must develop more sophisticated and innovative virtual tourist experiences. Such sophistication and innovation are closely related to further progress in VR technologies. For example, in almost all virtual tours and other online experiences, interaction possibilities and immersion exposures are limited. Thus, we can probably expect more immersive virtual tourist experiences, once the internet speed and VR goggles reach a certain level of sophistication. Another avenue for the sector's adaptation may involve an increased development of the hybrid tourism offerings, as with Isetan Shinjuku in Japan.

To adopt these changes, organisations must overcome associated challenges, such as the problem of commercialisation of virtual tourist experiences. Presently, VR experiences are free of charge, so it might be challenging to translate them to a paid service. This challenge might be overcome by increasing the technological sophistication of the virtual tourist experience, thereby meriting a (higher) price for the offering. Another challenge is the need to clearly demarcate virtual from IRL tourism, since some firms treated their virtual tours as tools for promoting their IRL tourist products, aiming to attract visitors after the crisis. The practical aspects of differentiation should become clearer once the firm determines the purpose of virtual tourist products. Along these lines, we already emphasised the challenge of re-evaluating the stakeholders necessary to deliver the hybrid form of tourism products. A tourism firm offering hybrid products will have to manage more complex forms of supply chains, including actors that, previously, were not necessarily related to tourism, such as retailers and delivery firms. There are also technology-related challenges.

4.2. Business model flexibility

The second domain of transformation was the business model flexibility of tourism firms. Business models changed depending on the type of actor (tour operators, hotels, restaurants, etc.), but they all had some sort of flexible adjustment of value proposition, to mitigate negative consequences of the pandemic. For example, hotels and other accommodations experienced massive declines and started to offer longer stays at reduced prices. At the beginning of the pandemic, travellers returning from abroad were offered two-week isolation plans, frequently with social-distancing-assured transportation from the airport (Feel Japan, 2020). Moreover, hotels, cafés and even karaoke bars offered isolated workspaces to employees unable to work from home (Cision, 2020).

Another observed change has been an emphasis on business models that reduce reliance on employees. Adaptations such as remote check-in solutions were recommended by industry experts. The change was also visible when restaurants switched to the drive-in and drive-through models and increased the availability of takeaways and home deliveries, including even some Michelin-starred restaurants in the USA (Gibson, 2020). Another change in business models was the move to cashless payments, to diminish the risk of infection in comparison to banknotes (Bruna, 2020). This solution has been implemented widely in our examples.

Concerning industry adaptations, although many firms declared bankruptcy, our analysis simultaneously exhibited that at least some tourism, as well as hospitality organisations, managed to flexibly shift their business models and maintain their business amid the crisis. We can thus expect tourism firms to instil more flexibility in their business models by not only making different types of products but also developing the network with diverse stakeholders (e.g. suppliers), distribution channels, and target markets. Furthermore, measures of social distancing may propel a reduction of personal contact in services, especially if the firms insist on reducing the number of service employees for health reasons. Social distancing will likely remain a societal norm, not least because of scepticism regarding non-vaccinated individuals. Another adaptation we expect is the insistence on cashless payment solutions, such as credit cards, smartphone wallets, and other digital payment solutions.

For some of the challenges related to these adaptations, resource management is related to business model flexibility which requires resources to swiftly shift the existing *modus operandi* to new circumstances. However, this crisis has limited the availability of resources, leading one to question how long the innovations in business models will be able to sustain tourism firms. Furthermore, flexible resource utilisation is challenging for tourism firms, as most of them are small-to-medium scale and frequently lack slack resources, even in normal circumstances. COVID-19 accentuated this point. Also, the pandemic increased health concerns, not only for customers but also for personnel. Tourism and hospitality jobs are labour intensive, which means the risk of infection must be reconsidered. Then, probably the largest challenge related to business models is maintaining a high level of service quality when personal contact in services is reduced. Services are extremely dependent on mutual individual contacts between the service-delivering employees and the customer, and the reduction of social contact may affect the quality of service. Finally, issues of payment safety for cashless solutions should not be disregarded either.

4.3. Human resources

World Travel & Tourism Council estimated that up to 75 million employees lost their jobs in the industry worldwide due to the pandemic (World Travel & Tourism Council [WTTC], 2020). However, while the tourism sector experienced a negative development, other sectors lacked a workforce, such as the online retailing sector (Amazon) and general stores (Weise, 2020). Thus, human resources trickled from tourism and hospitality to these other sectors. One means to facilitate this transfer was Hilton's initiative to expedite surplus human resources to Amazon, CVS, Walgreens, and grocery stores like Albertsons and Publix (Sperance, 2020). Depending on future developments and the post-crisis recovery, the tourism sector may struggle to rehire these workers. For the dismissed workforce, government support measures were introduced. For example, the Romanian Ministry of Labour covered 75% of the average gross salary of technically unemployed workers, and in Spain, regions postponed loan interest payments of companies and self-employed workers affected by the crisis (Organisation for Economic Co-operation and Development [OECD], 2020). Thus, the governments are securing the availability of tourism workers at a later period.

Another observed change in the sector was remote work. Hotels, travel agencies, and other tourism firms encouraged their office workers to work from home – except for employees in customer contact. Contrarily, the crisis affected certain groups of employees negatively – for example, ex-pats in Japan were stranded (Reynolds, 2020) and older workers experienced higher unemployment rates than their mid-career colleagues (Terrell, 2020). This disparity accentuated the ethical aspects of industry employment and the fragility of safety nets for the contingent workforce (OECD, 2020). Finally, as previously emphasised, demands for personnel health safety were pronounced during the crisis.

We expect the most critical sector-related adaptations associated with human resources to be the relative shortage of the workforce because fired tourism employees may change their occupations and migrate to sectors offering more secure jobs. This shortage will be even more pronounced because the industry will recover slowly, and university students may be reluctant to pursue careers in the tourism industry because of job

insecurity. Thus, COVID-19 has the potential to further accelerate the challenges of securing both highly skilled and talented personnel. Another adaptation is continued reliance on the public sector. This sector's influence will include a stronger safety net for different groups of employees. In addition, we have already emphasised business models not relying on employees and issues of personnel health and safety.

We identified several challenges emerging from the analysis, the most relevant being future recruitment. We still do not know how long the pandemic will last, which affects the length of recovery of the sector and indirectly influences personnel's employability. Moreover, this challenge is enhanced because of the current lack of career prospects for youth studying at universities and colleges. Another challenge is related to the types of workforce organisation required in the business operation. The consequences of hybridisation of the tourist experience require firms to adopt more technology in their current operations, hire new employees with new skill sets, and train and retain them. Additionally, the pool of competent people who can work with both technology and service might be limited. This is especially problematic in the tourism industry, where salaries are notoriously low because technicians can earn much more in other sectors. Concerning the public sector's strengthened significance, challenges may include the implementation of legislature aimed at improving working conditions for some groups of employees, as well as personnel health management issues.

4.4. Travel restrictions

Travel restrictions have greatly impacted tourism firms because they effectively halted the inflow of visitors. Eventually, domestic travel has reopened, with continued restrictions on international and overseas travel. For example, the Japan Tourism Agency has been actively promoting domestic tourism by including measures such as discounts on travel products (Davies, 2020). Such measures have boosted tourism consumption in Japan, despite misgivings about its negative impacts on infection control measures (Reidy, 2020). A new form of isolationist travel emerged, with outdoor trips, remote lodgings, and private camps (Glusac, 2020). Other changes related to travel were the avoidance of public transport and the virtual collapse of air transportation. Experts predict that air carriers will continue to struggle for at least a couple of years domestically and several years internationally (Isidore, 2020), which can impact international tourism in the foreseeable future.

Thus, we expect that local and domestic destinations will gain in popularity, especially secluded and isolated places. However, the number of visitors to tourist destinations and accommodations will be limited to ensure social distancing and maintain the 'secluded exclusivity' of some destinations. Such adaptations will consequently demand changes in destination branding and marketing. Another adaptation is related to preferred modes of transportation. Our analysis predicts an escalation in private car transportation, with some reservations. Generally, cars are seen as a practical means of domestic transportation, offering isolation to private individuals during their travels, but there are health concerns about car rental services. Public transport is expected to slowly recover due to the measures taken to protect people from infection, although some reports on the Shinkansen bullet trains in Japan suggest otherwise (Takezawa, 2020). Nevertheless, as cars will probably become a more preferred mode of travel, the industry will have to develop tourism accessible by car. Despite some calls for revisions of visa regimes, we do not expect this to happen on a larger scale, but we do expect an introduction of corona-free destination certificates, as well as similar certificates for tourism firms, such as souvenir shops, accommodations, and so forth.

The analysis indicated manifold challenges. The largest challenge is preventing overcrowding on local and domestic destinations considering health concerns. Next is the high cost of necessary adaptations to ensure the health and safety of visitors and employees, including constant, thorough cleaning, disinfecting, and so forth, and the higher costs of adjusted marketing. The introduction of health certificates raises questions regarding the legitimacy of these certificates; some firms might use false certificates to mislead visitors. Another related issue is that different countries should reach a consensus regarding the criteria for granting a corona-free certificate.

4.5. Risk perception and crisis management

The final domain that has been identified is risk perception and crisis management. Generally, the level of risk perception and preparedness in tourist firms was low, which is probably why the tourism industry had to rely heavily on the public sector, especially financial support in the form of government loans, subsidies, other financial stimulations, and the policies shaping the sector. Besides subsidies aimed directly at the firms and the workforce, the Japanese government invested ¥1.7 trillion (app. \$16 billion) to stimulate demand for domestic tourism (Davies, 2020). It also announced the establishment of a new system to provide loans to SMEs with virtually no interest and no collateral. Apart from governments, private actors also offered financial support aimed at smaller firms. For example, Airbnb reserved \$250 million to support its hosts whose reservations had been cancelled (Lee, 2020).

Low levels of preparedness to confront the pandemic are somewhat surprising, considering that Asian countries, in particular, had previously experienced pandemics such as the severe acute respiratory syndrome-related virus (SARS) and, to some degree, Middle East respiratory syndrome (MERS). Thus, several articles in this domain highlighted experts suggesting measures, advice, and guidelines about procedures to be followed during the crisis (e.g., Farazad, 2020). These experts provided survival plans and suggested increased flexibility of business plans, health management and accelerated digitalisation, and a focus on domestic tourists. Overall, most suggestions to and reactions of the tourism firms included some sort of flexibility, either the business model flexibility described above or organisational and operational flexibilities.

The observed changes entail several interrelated adaptations. Learning from the COVID-19 crisis, tourist firms must, in the future, increase their levels of risk awareness, infuse their organisations with numerous flexibilities (e.g., organisational and operational), continue to rely on public sector support, and, consequently, organise and nourish these relationships, for example, via platforms aimed at discussing national plans. Consequently, we expect more emphasis on these three issues (preparedness, organisational flexibility, and relationships with the public sector) in tourism firms.

Our results show that challenges in this domain are related to costs. Though embedding flexibility and raising the level of preparedness are perceived as costly, the benefits outweigh the costs. The last challenge concerns the reliance on governmental financial support – while loans, subsidies, and policies may help tourism firms, they may also represent constraints, depending on the terms of such assistance.

The most significant observed changes, expected adaptations of the tourism sector, and main associated challenges for each of the five domains of transformation are summarised in Table 1.

Table 1
Summary of the results

Domain of transformation	Observed changes	Expected adaptations	Associated challenges
<i>Accelerated digitalisation</i>	Moving tourism experiences to online platforms (e.g., online tours and virtual tourism) Hybridisation of tourism products by mixing offline and online tourism offerings (e.g., online tours combined with virtual shopping, including home delivery of purchased items)	Development of more sophisticated and innovative virtual tourism experiences and tourism products as the technology progresses Further combinations of offline and online experiences and products	Future commercialisation of online tourism experiences that are currently offered free of charge Differentiation between IRL and virtual tourism offerings – they can promote one another, complement each other, or hybridise Hybridisation requires more complex partner networks (e.g., supply chains and actors unrelated to tourism and hospitality, such as retailers and delivery firms) Technology-related challenges (e.g., skills and costs to develop virtual solutions)

Table 1 (continued)

<i>Business model flexibility</i>	<p>Adjustments of value propositions (e.g., longer hotel stays for a reduced price, restaurant deliveries, etc.)</p> <p>Considering business models that do not rely on employees in service delivery (e.g., remote check-ins, drive-ins, and drive-throughs)</p> <p>Insistence on cashless payments</p>	<p>Higher levels of business model flexibility to encourage business model transformations in unexpected situations</p> <p>Altered nature of service encounters due to social distancing</p> <p>Stimulating cashless payment solutions</p>	<p>Utilisation of limited resources that can be invested to increase business model flexibility</p> <p>Maintaining high service quality when personal contact is reduced</p> <p>Payment safety</p>
<i>Human resources</i>	<p>High unemployment in the tourism sector and shortage of workers in other sectors (e.g., online retailing and some general stores)</p> <p>Reliance on government measures supporting dismissed workforce</p> <p>Some personnel allowed to work remotely (e.g., management and administration)</p> <p>Negative effects on some groups of workers (e.g., part-time workers, elderly workforce, ex-pats)</p> <p>Demands for personnel safety</p>	<p>Shortage of workforce in tourism because dismissed employees migrate to more secure and stable sectors and students are reluctant to pursue careers in the industry</p> <p>Heavy reliance on public sector</p> <p>Stronger safety net for vulnerable groups of employees</p> <p>Increased personnel safety</p>	<p>Future recruitment becoming more difficult due to the industry's instability and perceived lack of career prospects</p> <p>Hiring a skillful and competent workforce capable of tackling technology and service simultaneously</p> <p>Implementation of legislature aimed at improving working conditions</p>
<i>Travel restrictions</i>	<p>Surge in demand for local and domestic tourism, especially secluded and isolated destinations</p> <p>Collapse of air travel, skepticism about public transport, more reliance on private cars</p>	<p>Maintaining and limiting the number of visitors to local and domestic destinations and ensuring social distancing</p> <p>Adaptations in destination branding and marketing, including corona-free certificates for tourism firms such as souvenir shops and accommodations</p> <p>Adaptations in preferred modes of travel, with private cars becoming the dominant mode of travel</p>	<p>Preventing crowds and over-tourism at local and domestic destinations</p> <p>High costs of adaptations</p> <p>The question of legitimacy of corona-free certificate and the definition of its criteria</p>
<i>Risk perceptions and crisis management</i>	<p>Low levels of preparedness</p> <p>Heavy reliance on the public sector (e.g., government loans, subsidies, and other stimulation)</p>	<p>Increased levels of risk awareness and crisis preparedness, combined with increased organisational and operational flexibility, to swiftly adapt to unforeseen changes</p> <p>Continued reliance on the public sector and tighter relationships with the government</p>	<p>High costs of implementing risk preparedness and organisational flexibility</p> <p>The risk of government support constraining the sector by setting unfavourable conditions for support</p>

5. Discussion

The article aimed to delineate ongoing changes in the tourism industry due to the Coronavirus, the adaptations that the industry is experiencing, and the associated challenges that the industry might face. This section continues to discuss some of the issues appearing across the domains of transformation.

Our findings contradict some of the recent conceptual research (e.g., Gretzel et al., 2020; Sigala, 2020; Zenker & Kock, 2020). For example, Higgins-Desbioles (2020) and Zenker and Kock (2020) suggested using this opportunity to embrace environmentally sustainable modes of consumption. However, our

analysis does not offer evidence of this research trajectory. Tourism firms are focused on survival and do not exhibit ambitions to transition to more sustainable modes of business. On the contrary, we might claim that they suffer from tunnel vision, which, in combination with the adaptations of increased domestic tourism and cars as the preferred mode of transportation (see also Li et al., 2020), could lead to decreased sustainability concerns. Some post-lockdown reports have revealed a surprisingly rapid rebound in carbon emissions (Harvey, 2020).

Furthermore, we can conclude that the most relevant (and probable) enabler of a wide variety of observed changes is digitalisation. Digital solutions permitted several key changes and adaptations across the domains, such as the creation of platforms, allowing for adjustments in business models, and the development of virtual tourism experiences. Current literature and experts agree that the COVID-19 crisis accelerated the digital progress in tourism (Gretzel et al., 2020; Zeng et al., 2020). However, contrary to Zeng et al.'s (2020) claims that the COVID-19 crisis is driving robotics adoption, our analysis has evidenced that adopted digital solutions rather dominate more mundane aspects of tourism operations, such as payment, check-ins, and service delivery, with some possible opportunities to develop virtual tourism solutions in the future, in combination with, for example, gaming or embedded online shopping. Although service robots undoubtedly have a strong potential to transform the industry (Zeng et al., 2020), the technology requires further development.

Finally, the insights of the five domains – accelerated digitalisation, business model flexibility, human resources, travel restrictions, and risk perception and crisis management – frequently interplayed and converged. For example, the shift to virtual tourism experiences implies the inclusion of human resources with the skills and competencies needed to develop such experiences. Our results emphasised limitations in accessing skillful digital workers needed to develop virtual solutions. Simultaneously, the business model of tourism firms may, in the future, include combined virtual and physical value creation. Additionally, to some extent, issues of health management are present in several domains of transformation. For example, personnel health safety within human resources and health certificates under both travel restrictions and crisis management. Thus, it is highly relevant to note how changes in one domain could influence adaptations and challenges in other domains.

6. Limitations, future research directions, and managerial implications

One limitation of our study is its time frame – the articles in the data set that we analysed were collected when the crisis was still unfolding. As such, our results are inevitably defined by this period. Nevertheless, they are relevant because the adaptations and the challenges reflect the reality of the developmental processes in tourism. To mitigate this limitation, we suggest a more longitudinal study of firms in the industry.

Moreover, we must acknowledge the limitations of our method. As our data collection has not been limited to any specific country or newspaper database because we attempted to encompass the impact of COVID-19 on the tourism sector in broader terms, we have opted for a general online search. To neutralise possible search bias and deficiencies of such a process, we used a neutral browser and search engine tools. Despite these measures, we cannot exclude the possibility that a certain level of bias remained, despite our efforts. Nevertheless, our findings seem to correspond to emerging studies in the field, confirming its relevance.

We further suggest future research and managerial implications based on these results. They are summarised in Table 2.

Table 2
Future research directions and managerial implications

Domain of transformation	Future research directions	Managerial implications
<i>Accelerated digitalisation</i>	To bridge the gap between tourism and VR solutions, we suggest research cross-fertilising these two topics, with a special focus on the transformation of tourism experiences, tourism products, and, eventually, tourism firms	Managerial attention required for the integration of service skills, tourism competencies, and IT skills, to deliver hybrid tourism products Development of additional supply chain competences for shopping and delivery integrated in virtual tourism
<i>Business model flexibility</i>	Explore business model flexibility in tourism in more detail The exploration of reduced personnel contact on the service component of the tourism business model	Tourism managers must increase business model flexibility Management of customer satisfaction when personal contact in services is reduced or when the business model does not rely on employees in a service-sensitive business
<i>Human resources</i>	Infusing tourism research with insights from employer branding to understand how the sector's attractiveness might be increased	After the pandemic, the sector must increase its attractiveness to promote future recruitment Managers have to offer safe working conditions regarding both health and job security Regarding job security, expected legislature changes will need to be implemented in the organisation
<i>Travel restrictions</i>	Explorations of new and adapted forms of tourism and travel during the current crisis, such as local tourism and isolation tourism For adaptations in destination marketing, one potentially interesting stream of literature is the place branding literature dealing with crises	Enact alterations to accommodate cars as a preferred mode of travel – a thicker network of roadside attractions, larger car parks, and so forth Developing new or adapting existing strategies of destination marketing required to cope with changes in the structure of travelling Higher costs of these adaptations
<i>Risk perceptions and crisis management</i>	Infusing tourism research with insights from the organisational flexibility, organisational resilience, and risk management and risk preparedness literature	Increase the levels of organisational and planning flexibility in tourism firms Emphasise preparedness to face future similar crises in their organisations Tighter collaboration with the governments and other bodies responsible for support in the foreseeable future

To conclude, the COVID-19 pandemic brought about a significant impact and highlighted several newly emerging issues in tourism firms worldwide. We have identified five such transformations and charted associated changes, adaptations, and challenges. However, our results simultaneously exhibited that these shifts are not necessarily negative, as they shed more light on possible future evolutionary trajectories of the industry, leading to the improvement of the next generation of tourism firms in the post-corona world.

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